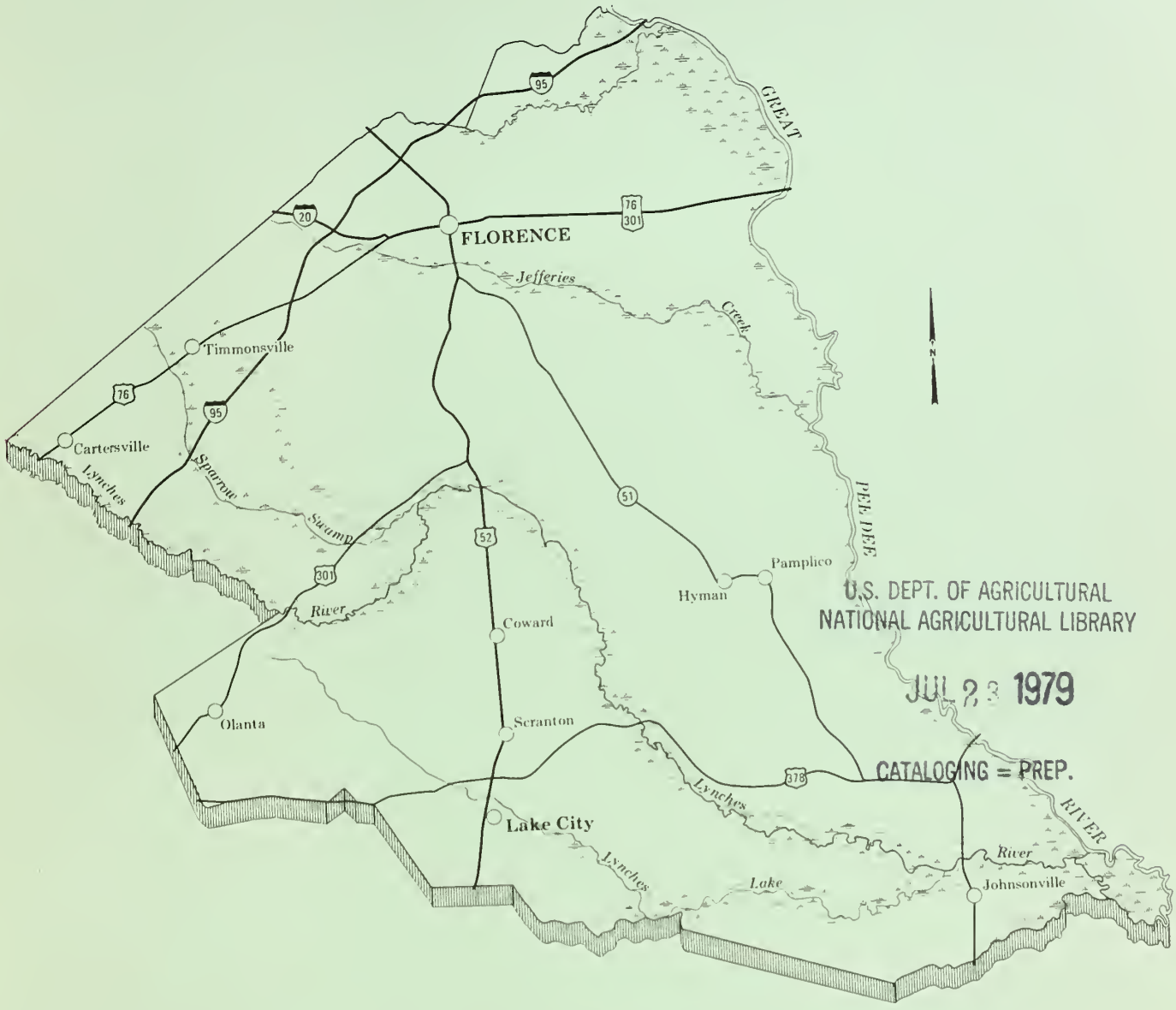
WATER RUNOFF STUDY
FOR MAIN DRAINAGEWAYS AND OUTLETS



FLORENCE COUNTY, SOUTH CAROLINA

Prepared under sponsorship of
FLORENCE COUNTY
FLORENCE COUNTY COUNCIL
and
FLORENCE SOIL AND WATER CONSERVATION DISTRICT
in cooperation with the
U. S. Department of Agriculture
Soil Conservation Service

4-36631 6-78

April 1978

D DESIGN DATA" SHEETS

To find inf or Lateral Ditch contained in this Wat eps should be taken:

1. The app olved should be known.

2. Refer t SHEETS" and locate the area on this

3. This in of the map sheet showing the drainag

4. Turn to ocate the area desired on this ma map will show the "Planning Area Number" and, also, the Main or Lateral number such as M-1, L-1, L-2, etc.

5. Turn to this planning area number in the ENGINEERING AND DESIGN DATA Sheets and locate the Main or Lateral desired on this sheet.

Each time a lateral enters the main canal, the Main is broken into a section at this point. Laterals also are broken into sections at points where other laterals enter them. This was necessary to design each section to carry the flow increase. Also, it was necessary to break mains and laterals into sections at state and county road crossings in order to design the proper size culverts and bridges at these points.

It must be kept in mind that the information given in the "ENGINEERING AND DESIGN DATA" Sheets begins at the upper end of each watershed and proceeds, section by section, to the outlet.

EXAMPLE: To find information for the ditch crossing S. C. Highway 51 approximately 1 mile northwest of Hyman refer to figure 3. "Index to Atlas Sheets". The index indicates that the point where this ditch crosses highway 51 can be found on Sheet 8 at the back of the report.

Sheet 8 designates this ditch as main number 3 (M3) in Planning Area 7 and shows it was designed in four Segments A, B, C, and D.

A general description of Planning Area 7 is found on page 15 of the report and the detailed Engineering and Design Data Table is on Page 91.

Beginning at the upstream end of the ditch, M3A, in the table for Area 7 on page 91 and proceeding downward toward its outlet end, it is found that it crosses highway 51 at the end of Segment M3B. Total length of the ditch is estimated to be 6900'. The various criteria for engineering and design estimates may be obtained from the table for each segment.

FOREWORD

About 1730 the interior of the South Carolina colony was divided into a number of townships. This was a plan designed by the colony's Governor Robert Johnson to attract Protestant settlers to this area, partly to serve as a buffer to Indian attacks. (The Pee Dee and Catawba Indian tribes inhabited the area and regions along the Pee Dee River.) Pioneers were offered free land and various other inducements to settle in these townships. The idea proved successful and brought the first permanent white settlements into what presently is the Florence Area.

Queensborough Township, including what is now the lower portion of Florence County was laid out in 1733. It initially was successful in attracting small farmers, as the land was suited to large plantations. Among these were a group of Pennsylvania Welsh farmers who asked for a land grant and in 1736 formed a community at Long Bluff (present day Society Hill). Their main crops were hemp and flax. These Welsh Baptists established churches around the area along with Methodists, Presbyterians, and Protestant Episcopalians.

The communities increased and after the Revolution, during which Francis Marion's raids were well known, the agricultural industry grew and cotton and corn remained the staple crops throughout much of the 19th century. The agricultural interior of South Carolina was linked with the seaport of Wilmington by the Wilmington-Manchester Railroad in 1849. The way station was named "Florence" in 1854 in honor of Florence Harllee, daughter of the president of the railroad. It was not until 1888 however that Florence County was established after agitation by citizens to form a new county. The new county was formed from portions of Clarendon, Darlington, Marion and Williamsburg counties with Florence becoming the county seat in 1889. 1/

Since the first settlement was made near the Queensborough Township in 1736, the existing problem of imperfect internal and surface drainage has affected the growth and development of this area in South Carolina.

The higher areas of land were used by the first settlers for homesteads and for small fields to produce food crops. Low, wet lands were left in their natural state. As settlements grew and more land was needed for farming operations, it was necessary to install some type of drainage system on individual farms. These drainage systems were usually excavated by hand, many with slave labor. As a result, these small ditches were inadequate and only partially met the drainage needs. The lack of knowledge of drainage systems and the availability of only hand tools retarded the design and installation of complete systems.

With the increase in land use and particularly with the advent of modern construction machinery such as the bulldozer, dragline and backhoe, it became relatively easy to excavate larger canals and outlet ditches needed for adequate drainage. Even with the new machines, much of the drainage work installed has been the result of expediency incident to population growth and did not follow a well developed plan of action. Improving the quantity and quality of agricultural crops and providing well drained areas for home sites are essential to perpetuate economic growth of a community; providing additional drainage is necessary as a first step toward enhancing the environment and increasing income for its people.

The Water Runoff Study for Main Drainageways and Outlets in Florence County is the direct result of foresight and interest of the county authorities and the Florence Soil and Water Conservation District Commissioners who saw the need for a plan to enhance the potential development of the county. Agencies at all levels of government - city, county, state, and federal - as well as private enterprise and numerous individuals, cooperated in the development of the plan. The Florence County Council appropriated funds for the local share of the cost of the study including the publication of this report. Technical assistance was furnished by the Soil Conservation Service.

The plan and information contained in this report will be of interest to organizations concerned with land use in the county. The cooperation of other agencies, groups and individuals in the use of this report is encouraged.

1/ Excerpt from a "History of Florence, 1700-1973" by Douglas J. Ernest.

CONTENTS

TEXT

TEXT

FIGURES

TABLES

WATER RUNOFF STUDY
FOR MAIN DRAINAGEWAYS AND OUTLETS
FLORENCE COUNTY, SOUTH CAROLINA

INTRODUCTION AND SCOPE

One of the most significant needs for efficient use and development of the land resources in Florence County is the provision for the management of excess rainfall runoff. The lack of adequate drainageways is extremely detrimental to existing and future land use management. Flooding results in frequent and costly damage to natural wildlife habitats, agricultural crops, and public and private property. Flooding also disrupts facilities in urban and industrial areas. In recent years the need for drainage has affected and virtually prevented housing development progress in many areas where septic tank drain fields were to be installed.

The need to reduce flooding through improvement of drainageways and outlets is a problem that demands priority attention.

The development of a water disposal plan for an entire county should logically begin with a study of the need for main drainageways and outlets to remove excess water.

The purpose of this study is to point out the extent and severity of the excess water problems and to estimate the sizes and quantities of water disposal systems to convey excess water properly to adequate outlets.

The engineering and design data in this report are based on reconnaissance surveys, information presently available, and knowledge gained by long experience in planning and establishing drainage facilities in the county. These data are adequate for the purpose of determining preliminary designs and preliminary cost estimates based on present land use, but are not adequate, however, for the preparation of final construction plans, designs and costs. The data in this report can be used by engineers as guides to determine types of additional surveys and investigations needed to secure detailed information for final design.

A discussion of some of the principal criteria used in sizing channels is included, as well as technical references which can supply information for final design.

Panoramic view of flooded farm land and paved road as a result of heavy rainfall and a need for additional excess water removal facilities.

FACTORS AFFECTING WATER DISPOSAL

The location of Florence County, in the Atlantic Coastal Plain, along with the county's physical features result in complex water runoff problems. Physical features that contribute to these problems are topography, rivers and streams, rainfall, soils, and land use and ownership, all of which are inter-related. A brief discussion of how these features affect the water disposal, and a description of the existing drainage system follows.

Topography

Topography is a severely limiting factor affecting excess water disposal. The land is generally level with slight undulations in some sections of the county, however, the removal of excess water is restricted in most sections due to inadequate drainageways. The natural drains, other than the rivers, are broad, have flat grades and are heavily vegetated. In their present state, little or no channel exists, causing extreme flooding in depressed areas although potential outlets are available.

"Flopped" tobacco - a high value crop loss caused by lack of proper drainage in an agricultural area.

Rivers and Streams

Florence County is covered with a network of rivers and streams and swamp runs that have a significant effect on the drainage pattern. The Great Pee Dee River forms the entire eastern boundary of the county with a number of small tributaries flowing to it. Jefferies Creek, just south of the city of Florence, cuts through the county from West to East and empties into the Great Pee Dee River. Lynches River, forming a portion of the county's western boundary, curves up northeasterly into the center of the county and then southeasterly slicing the county in half. It joins the Great Pee Dee River in the extreme southeastern corner near Johnsonville.

In addition to these main rivers, several big swamps affect large areas of land. These include Black Creek, Middle Swamp, Lake Swamp, Sparrow Swamp, Lynches Lake, Camp Branch, Willow Creek, and Big Swamp.

All of these rivers and swamps affect the county's drainage. The main rivers are well defined; their water levels are generally at lower elevations and provide an outlet for higher ground drainage. However, these rivers and other large creeks are constantly a threat to adjacent low-lying areas. After heavy rainfall periods flood water overflow inundates these areas and blocks tributary outlets. A sizeable area of the county is affected in this manner.

This report does not include any study of the main streams. It does include a study of the tributaries to relieve adjacent lands of flooding as quickly as possible after heavy rains when river floods recede.

Flooded cropland caused by inadequate outlet for this field ditch.

Rainfall

U. S. Weather Bureau records, Table No. 1, show monthly and annual totals of rainfall for Florence and vicinity. The average annual rainfall of 45 inches would not cause a serious drainage problem if it were evenly distributed. The most serious drainage problems occur in low flat areas which are flooded by high intensity, short duration rain storms.

The design of water disposal systems and supporting structuresare related to the amount of runoff that can be expected from storms of differing intensities and durations. (See Tables Nos. 2 & 3)

Soils

According to the Soil Survey for Florence County, more than 70 percent of the soils have excess water problems. This fact points out the need for management of excess water in the county. It would not be desirable or practical to provide drainage for all of the wet soils in the county; the degree of drainage needed is dependent on the type of soil and the land use.

Soils have characteristics which influence the need for and the degree of drainage. Some of the more important characteristics are slope, texture, infiltration, permeability, structure, depth, waterholding capacity and depth to water table. Fine (clayey) textured soils have slow internal water movement and will not readily respond to deep ditches. Shallow ditches to remove surface water provide the best practical means for improvement of these soils for most uses. Sandy soils, having high or fluctuating water tables, respond to subsurface drainage but present some problems in the design of stable open ditches.

A knowledge of the characteristics and the engineering properties of the soils is essential in planning, designing and constructing adequate runoff water management systems.

Land Use and Ownership

Changes in land use in recent years have had an adverse effect on water disposal in the county. One of the most significant of these is urbanization. Areas being developed for housing, shopping centers and industry in most instances have inadequate excess water disposal systems facilities. Most of the systems now in use were established to handle the agricultural needs of the areas. They are not adequate to handle the increased runoff resulting from urbanization. Roof tops, paved roads, compaction, raised water tables resulting from septic tanks and drain field installations, and elimination of some ditches during development, have all caused an increase in the amount of excess water to be disposed of.

TABLE NO. 1
TOTAL INCHES OF PRECIPITATION
FLORENCE, SOUTH CAROLINA

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1941	2.33	2.16	5.83	3.22	.35	8.57	8.63	6.91	1.19	1.50	.67	6.80	48.16
1942	2.56	2.55	5.25	2.57	3.89	3.11	9.25	5.57	1.59	.53	.79	3.34	41.00
1943	3.40	1.21	5.26	2.29	1.57	3.17	5.43	1.12	1.90	T	2.91	4.30	32.56
1944	2.97	3.92	4.89	2.92	3.36	3.68	13.36	2.71	2.87	3.74	1.57	.94	46.93
1945	1.76	2.55	4.15	3.17	3.31	4.23	5.75	6.39	13.43	1.40	.98	7.86	54.98
1946	1.63	2.43	2.30	3.88	3.17	3.14	5.73	4.80	1.05	3.37	1.95	.53	33.98
1947	2.40	.19	4.29	7.78	1.99	2.88	10.14	7.65	3.47	1.90	7.16	4.03	53.88
1948	3.69	5.09	6.19	2.86	5.39	6.68	1.34	4.08	4.15	3.70	8.16	4.28	55.61
1949	.87	4.56	1.33	7.84	3.62	3.91	3.89	9.24	3.54	2.27	2.29	1.58	44.94
1950	2.48	.97	3.98	3.81	2.89	3.41	8.39	4.00	2.42	3.16	.89	3.79	40.19
1951	.94	.82	4.20	3.40	.56	7.32	10.79	4.28	3.81	.55	2.49	3.02	42.18
1952	2.21	4.30	5.47	2.58	1.96	5.74	1.21	10.89	4.86	1.22	2.43	2.46	45.33
1953	2.75	4.44	3.60	2.37	1.31	4.11	3.72	4.84	5.07	.00	1.37	6.51	40.09
1954	2.39	1.31	3.31	1.75	4.35	.24	2.09	1.25	.87	7.29	.81	1.84	27.50
1955	4.05	1.66	1.22	5.13	3.23	2.47	4.84	3.15	6.63	1.30	1.87	.36	35.91
1956	1.69	5.83	2.31	2.92	2.30	4.90	3.10	4.22	4.39	2.21	1.40	2.52	37.79
1957	1.83	2.26	5.48	.53	4.19	4.93	2.55	5.68	9.03	.80	4.19	2.29	43.76
1958	4.49	3.78	4.29	5.97	1.87	7.97	4.45	2.81	.67	3.16	.44	2.28	42.18
1959	2.85	5.36	4.91	7.60	3.90	3.55	13.68	3.93	7.20	6.83	1.11	3.79	64.71
1960	4.46	5.62	3.39	1.76	1.49	6.09	11.14	1.46	4.65	3.69	1.80	2.10	47.65
1961	1.24	3.55	4.23	5.59	5.35	9.29	4.86	4.75	2.13	.34	1.57	1.43	44.33
1962	3.68	4.14	4.53	3.09	.81	4.57	3.71	2.22	3.55	.28	3.37	1.81	35.76
1963	5.05	2.27	1.77	2.20	3.14	2.86	3.83	1.52	4.13	.43	3.78	2.44	33.42
1964	5.77	5.21	3.67	3.38	1.97	4.10	10.06	5.49	8.10	8.16	.48	2.58	58.97
1965	.80	5.69	6.33	2.79	1.89	8.86	6.21	8.53	3.66	1.65	1.68	.54	48.63
1966	6.99	3.49	2.72	3.03	8.18	3.70	6.26	4.99	2.50	.33	1.00	3.34	46.53
1967	2.64	2.40	2.35	1.25	5.49	1.56	4.40	6.72	2.71	1.12	2.93	2.59	36.16
1968	3.45	.84	1.66	3.02	1.34	5.97	9.94	1.97	.57	6.61	4.56	3.03	42.96
1969	1.52	4.37	3.94	3.50	3.57	3.35	4.85	5.70	4.14	.83	2.24	2.97	40.98
1970	2.47	2.96	6.83	.65	1.71	1.73	3.25	4.55	5.29	3.03	.68	3.07	36.22
1971	4.35	2.88	10.96	3.28	3.12	4.20	7.65	5.85	1.07	7.98	1.49	1.42	54.25
1972	5.22	3.11	2.64	.60	7.12	6.19	4.42	4.99	2.29	1.01	4.29	3.25	45.13
1973	3.95	4.91	3.58	3.41	2.21	7.78	8.35	8.73	2.76	.72	.46	6.52	53.38
1974	5.04	4.11	3.39	2.87	5.63	3.21	4.31	11.46	5.46	.18	3.51	4.94	54.11
1975	5.70	5.17	3.77	4.62	4.32	1.47	7.59	3.77	5.62	2.19	1.37	5.80	51.39
1976	3.26	1.08	4.12	.59	5.03	8.17	5.56	1.50	.92	3.79	2.83	5.27	42.12
Average Rainfall	3.14	3.26	4.11	3.28	3.21	4.64	6.24	4.94	3.82	2.42	2.26	3.21	44.55

From Rainfall Data, U.S. Weather Bureau - Florence, S.C. FAA Airport Station.

TABLE NO. 2
PRECIPITATION EXTREMES (1941-1976)

	Maximum Monthly	Year	Minimum Monthly	Year
January	6.99	1966	0.80	1965
February	5.83	1956	0.19	1947
March	10.96	1971	1.22	1955
April	7.84	1949	0.53	1957
May	8.18	1966	0.35	1941
June	9.29	1961	0.24	1954
July	13.68	1959	1.21	1952
August	11.46	1974	1.12	1943
September	13.43	1945	0.57	1968
October	8.16	1964	0.00	1953
November	8.16	1948	0.44	1958
December	7.86	1945	0.36	1955

Rainfall Data, U.S. Weather Bureau - Florence, S.C.
FAA Airport Station

TABLE NO. 3
RAINFALL IN INCHES FOR SELECTED DURATIONS
FLORENCE COUNTY, SOUTH CAROLINA

	30 Min.	1 Hour	2 Hour	3 Hour	6 Hour	12 Hour	24 Hour
1 Year	1.3	1.7	1.9	2.1	2.4	2.9	3.3
2 Years	1.5	1.9	2.3	2.5	2.9	3.4	4.0
5 Years	1.9	2.4	2.9	3.2	3.8	4.4	5.2
10 Years	2.2	2.8	3.4	3.7	4.4	5.2	6.0
25 Years	2.5	3.2	3.8	4.2	5.0	6.0	6.8
50 Years	2.8	3.5	4.3	4.7	5.6	6.7	7.8
100 Years	3.1	3.7	4.8	5.2	6.3	7.5	8.8

From U.S. Weather Bureau, Technical Paper No. 40,
"Rainfall Frequency Atlas of the United States."

Damage to homes and septic tank field drains results from heavy rains and poor water disposal systems.

Excessive rainfall runoff backed up in the drainageway outlet inundated and prevented use of an industrial parking lot near Coward, South Carolina.

Drainage culverts under driveways and roads in new as well as established subdivisions, are critical factors contributing to poor local drainage. Head losses alone, resulting from widespread use of underdesigned culverts create local flooding conditions.

As urbanization continues, the present water disposal systems will become increasingly inadequate to handle the increased runoff, and additional flooding will occur. After urbanization has taken place, it is extremely expensive and sometimes impossible to provide adequate water disposal. Regulations may be needed to insure that adequate water disposal plans are included in these areas during development.

Land ownership often is a factor in the installation of drainage improvements. Frequently it is necessary for one owner to go on another's property, or go through it, to obtain an outlet. In larger group projects it is necessary to cross a number of land owners to reach adequate outlets. In either case, it is imperative that right-of-way easements be obtained before work can be begun.

Wildlife

Proper drainage also plays an important part in another land use - upland wildlife management. Populations of game species such as deer, quail, turkey, and rabbits are enhanced in a safer and healthier wildlife environment provided in well drained areas. Unseasonably heavy rains can cause mass drowning of young animals and nestlings. Biting insect pests are reduced as a result of diminished breeding places in these areas where excess water is removed. Improvement of the habitat through proper water disposal allows greater natural food production. Seeded spoil banks not only control erosion but also provide food and cover, and travelways for wildlife.

Care should be taken, however, to protect certain wetland areas. Drainage of high value wetland sites is detrimental to wetland wildlife. Game species, such as wild ducks, geese, snipe, and some furbearers, depend heavily upon the water covered and water saturated areas for food and cover. Destruction of these areas through drainage could drastically reduce wetland wildlife species.

The discharge of dredged or fill material in inland waters and wetlands is regulated by the Federal

Water Pollution Control Act Amendments of 1972. Prior to placing fill material in wetlands, application for a Section 404 permit should be made to the nearest district office of the U. S. Army Corps of Engineers who are assigned the responsibility for carrying out Section 404 of the regulations.

The South Carolina Wildlife and Marine Resources Department can provide information, evaluation, and assistance in planning water management practices in wetland areas.

Existing Drainage System

Existing canals are usually located in natural water courses. However, in many instances, alignment is poor due to the fact that canals were located on existing property lines, cleared land borders, meandering branch runs or other physical features that were inconsistent with efficient channel flow conditions.

With the exception of some recently excavated canals, many drainage systems in rural and urban areas generally lack depth and capacity, have very flat grades and inadequate outlets. One exception to these conditions is the Lynches Lake - Camp Branch Watershed project located in the southwestern quadrant of the county between Olanta and Scranton. This project, completed in 1968, improved the natural waterway, and benefited hundreds of acres of land in this area. While the capacity of this improved waterway is still generally good, there is a need for some maintenance, especially vegetative removal, to restore full flow. A number of other smaller drainage projects completed in recent years, as well as numerous natural waterways, that serve as outlets also need the same type of maintenance to restore full flow.

Old ditches can be brought back to full capacity and service by simple maintenance or enlarging.

Maintenance

Lack of adequate maintenance is a factor affecting the capacity of drainage canals and ditches. Most of the existing drainage canals in the county were dug by hand many years ago; some were dug or enlarged by the Works Progress Administration (WPA)in the 1930's; clumsy floating dredges were used on some of the larger ones. These methods left nearly vertical side slopes with excavated material placed immediately next to the ditch. Access to practically all canals is restricted by high spoil banks which are covered by a heavy growth of trees and brush. Being continuous for long distances, these spoil banks prevent surface drainage resulting in ponding behind the banks. The extent of economic and practical maintenance by machine is limited largely due to these spoil placement practices.

EXCESS WATER DISPOSAL PRINCIPLES

This report presents a plan for the location and needed capacities of main drainageways based on present land use. This is, however, only a preliminary step in the establishment of a complete water disposal system. Further steps in designing the system will include the exact size, depth,

and grade of each drainageway determined only by a more detailed investigation and survey by qualified individuals. In some locations, detailed investigations might prove that existing drainageways are adequate.

Drainage systems are divided into two broad categories - surface drainage and subsurface drainage.

Surface Drainage

Surface drainage systems provide for removal of excess water from the land surface to an outlet. Surface water can best be moved by shallow graded channels or by forming the land surface to a uniform slope. Surface drainage facilities are particularly applicable to soils having slow permeability rates. Surface drainage on these soils is used to prevent ponding in shallow depression areas and also to divert water from protected areas to natural or excavated channels.

Subsurface Drainage

Subsurface drainage removes water from beneath the surface of the soil by facilities which create a difference in hydraulic head. The resulting hydraulic head causes water to move through the soil to an outlet at a lower elevation. This may be accomplished by open ditch drains or by closed drains of tile or perforated tubing. Often a combination of open and closed drains is used for subsurface drainage. Open ditch drains sometimes have an added advantage in that they can remove both surface and subsurface water . Properly installed closed drains require very little maintenance. They can also be designed to remove surface water by providing protected drop inlets or catch basins that simulate small storm sewer systems.

A ditch with good design section and managed spoil can serve as Surface and Subsurface Water disposal outlet for several landowners.

The purpose of subsurface drainage is to lower the water table to a point where it will not interfere with plant growth or the use of the land for residential or other purposes. The minimum depth below the surface at which water tables should be maintained depends on the purpose for which the land is to be used. Water tables, fluctuating from a lower level upward to or near the surface, may not be as great a problem for some agricultural uses as they would be in populated areas where construction of buildings, septic tanks, lawns and gardens, or streets would be damaged.

Water Runoff Systems

The components of an excess water disposal system are as follows:

The Collection Segment is that part of the drainage system which first picks up water from the land. It may consist of shallow trapezoidal ditches having flat side slopes, V or W type ditches, bedded areas, or graded land surfaces.

The Disposal Segment receives water from the collection segment and conveys it, usually in an open channel or floodway to an outlet.

Generally this report concerns itself with the disposal segment of the drainage system.

The Outlet is the end point of any section of a drainage system beyond which the conveyance system no longer guides or controls the water it discharges.

Excess Water Removal Requirements

The water disposal system should be designed so that flooding will not occur in critical parts of the watershed for a period of time sufficient to cause damage or disrupt utilities and services. For urban areas, design should provide for the removal of runoff from the design storm with a minimum of flooding. In agricultural areas, the degree of protection required by crops varies considerably, depending on their tolerance to the amount and duration of excess water. Truck crops are the most susceptible to damage from excess surface water, with damage occuring to some when flooded for the relatively short period of 24 hours or less. General crops such as corn and grain are less susceptible, with pasture being the least subject to water damage. Woodland areas are the least subject to damage from flooding for prolonged periods.

Poorly drained soils adversely affect the use of the land for most purposes. On agricultural land, high water tables restrict root depth; the soil temperature is lowered and air circulation is severely limited depending on the degree of soil saturation. Wet spots in the field delay farm operations and shorten the growing season.

In residential areas, poorly drained soils adversely affect the construction, maintenance and use of roads and streets in addition to the harmful effects on ornamental plants, flower gardens and lawns. These soils also limit or prohibit the development of some areas, preventing the proper functioning of septic tanks or tile field drains and thus contribute to health hazards.

Road culverts at lower elevation provide an outlet for low lying drainage areas and subsurface water - Soil cement bag-type headwall stabilized fill.

DESIGN CRITERIA

The design of excess water disposal systems and supporting structures is based largely on Hydrology and Hydraulics. This report is limited to the application of these sciences as they apply to water disposal systems. Data and detailed information on the design of the drainageways are tabulated on the pages following this narrative section.

Drainage Curves

To determine the required runoff and design capacity for the drainageways, the Cypress Creek formula was used:

$$Q = CM^{5/6}$$

Where: Q = Average rate of runoff in cubic feet per second for which the ditch is to be designed.

C = Appropriate drainage coefficient for 1 square mile of watershed.

M = Square miles of watershed.

This formula provides an economical and effective design for open ditches if C is selected properly.

The drainage coefficient is the rate of removal of runoff to provide a specific degree of drainage protection to an area. Land use, soils, topography and rainfall intensities and duration determine the selection of drainage coefficients.

Three runoff curves have been developed from which required drainage capacities of open ditches in this report were computed. Each curve is based on a particular land use. For purposes of this report, curves selected were for present land use. (See Figure No. 1)

The highest curve used is for general crops followed in descending order by the curve for pasture or grassland and the curve for forest or woodland.

These curves provide for the removal, in 24 hours, of the following estimated amounts of runoff for a one square mile area.

General crops curve	-	1.67 inches
Pasture Curve	-	.93 inches
Woodland Curve	-	.37 inches

Velocity

The maximum safe velocity in an open channel is determined based on soil characteristics, the shape of the channel, and available means for the stabilization of the channel after construction. The optimum velocity for channels, based on soil conditions in Florence County, is approximately 2 feet per second. The soils are predominantly sandy loams with sandy clay subsoils. There are some areas where sands occur, therefore the design of channels in these lighter soils must consider the need for checking erosion and bank sloughing that might occur, immediately following construction, when water tables are high.

Velocities were computed by use of Manning's formula:

$$V = \frac{1.486}{n} \times r^{2/3} \times s^{1/2}$$

Where: n = roughness coefficient
r = hydraulic radius
s = slope in feet per foot along the ditch

The proper design of a ditch cross section requires the selection of the proper value of "n". The following tabulations were used for selection of these values in the design of main canals with good alignment:

Hydraulic Radius*	"n"
Less than 2.5	.045
2.5 to 4.0	.040
4.0 to 5.0	.035
Over 5.0	.030

*The hydraulic radius is obtained by dividing the proposed area of the channel cross section by its wetted perimeter.

Roughness coefficients were selected anticipating flow retardance features, vegetative growth and sedimentation, several years after construction. Newly dug channels with lower roughness coefficients will have higher velocities initially. These velocities will reduce as the vegetation and sedimentation occur, especially during the first few years.

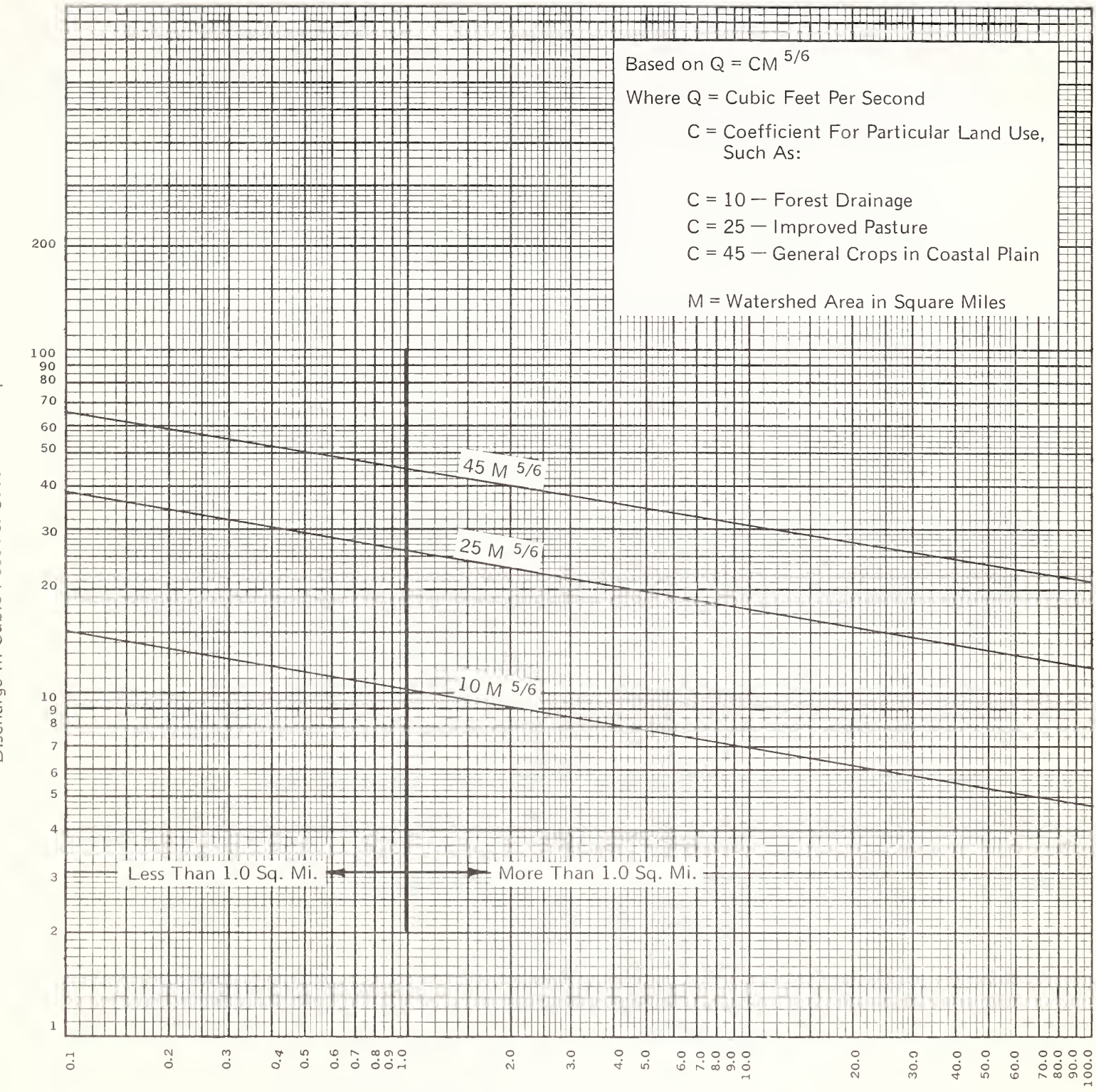


Figure No. 1 — Drainage Coefficient Curves

When larger ditches cross roads, a bridge provides unrestricted flow capacity for excess water runoff.

Channel Cross Section

Depth and width of the channel are both significant considerations in design. Channels designed for subsurface drainage must be deep enough to intercept at some depth below the surface and allow for safe disposal. The channel depth must be adequate for lateral ditches and tile drains. Other things considered to favor deeper channels with resulting narrower bottom widths are: less right-of-way is required, vegetative growth on the wetted perimeter is reduced, and conditions are less favorable for the formation of sandbars. A channel approximately as deep as its bottom width - within practical and economical limits - will remain effective for a longer period because it has more favorable hydraulic characteristics.

A minimum bottom width of 3.0 feet was used in sizing main channels, for this report. This conforms to a bucket width of small dragline excavating equipment commonly available in the county. Bottom widths were selected as narrow as design and construction criteria would permit to maintain a favorable hydraulic section with higher velocity to help prevent siltation.

Side slopes of the ditch, as well as depth and allowable velocities, are determined primarily by topography, soil conditions, proposed maintenance methods, and a need for adequate rights-of-way. To satisfy these conditions, 1 to 1 side slopes were used for main channels in this report. Detailed soil surveys may indicate subsoils that would allow ½ to 1 side slopes in many areas. This side slope has been used satisfactorily in numerous cases in the county. In urban areas, flatter side slopes may be desirable for aesthetic and easier maintenance purposes.

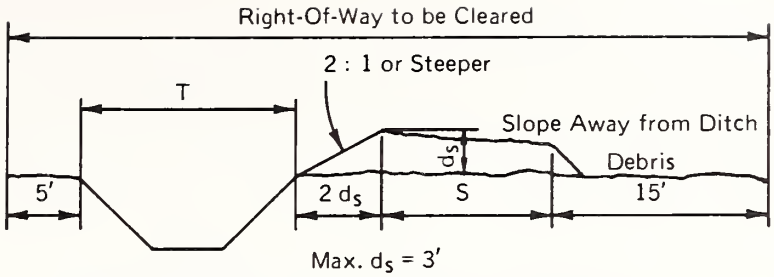
In fine sands, or other unstable soils, having high water tables, sloughing of side slopes may be expected immediately after excavation. Sloughing will continue until the water table becomes established at the lower level. The problem can be controlled somewhat in wide channels by utilizing a pilot channel to lower the water table, followed by final construction when the slopes have become more stabilized. If a pilot channel is not used, a maintenance operation may be required soon after the water table has stabilized to restore the desired cross section.

Culverts and Bridges

Culverts generally restrict the flow of water in ditches by decreasing the flow area thereby causing a loss in hydraulic head. This was considered in sizing main channels. At culverts, during design flow, the hydraulic gradient was set low enough to keep the profile of the water surface well within the channel cross section in all critical areas.

Right-of-Way Requirement-
Spoil Bank Management

Factors governing width of rights-of-way can best be understood by consulting Figure No. 2. The principal requirements for spoil bank management



Max. d_s = 3'

TYPICAL CROSS SECTION — SPOIL SHAPED ONE SIDE

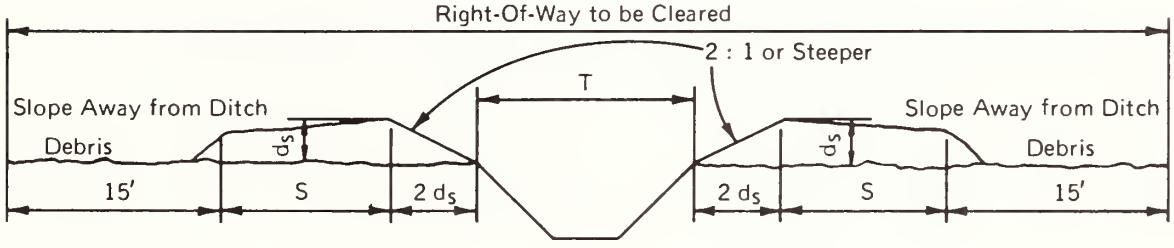
R.O.W. = 5 + T + 6 + S + 15

S = 1.3 A ÷ 3 (where A = Excavated Area)

Wooded Area - R.O.W. = $T + \frac{1.3\ A}{3} + 26$

Open Area - R.O.W. = $T + \frac{1.3\ A}{3} + 11$

Bottom Width Less than 20 ft.



Max. d_s = 3'

TYPICAL CROSS SECTION — SPOIL SHAPED BOTH SIDES

R.O.W. = 15 + S + 6 + T + 6 + S + 15

R.O.W. = 2S + T + 42

2S = 1.3 A ÷ 6 (where A = Excavated Area)

Wooded Area - R.O.W. = $T + \frac{1.3\ A}{6} + 42$

Open Area - R.O.W. = $T + \frac{1.3\ A}{6} + 22$

Bottom Width More Than 20 ft.

FIGURE 2

includes a right-of-way wide enough for placement of spoil and debris and shaping of spoil into a travelway for maintenance equipment. No berm widths are needed where the spoil is to be spread and shaped to establish a travelway on top of it. A berm width of 15 feet is recommended for access and to avoid slope failure where spoil is to be stacked and not shaped.

DESCRIPTION OF AREAS

To facilitate planning, the county was divided into 8 areas, generally along watershed divides or large drainageways. This delineation allowed the study to be made of the present drainage system and its needs peculiar to each area. A brief description of each area and the features having some influence on the study of its drainage problems follows:

Area 1 - Florence - Mars Bluff - Quinby

Area 1 joins Darlington County in the northernmost part of the county and is bordered on the South by Middle Swamp and Jefferies Creek and on the East by the Great Pee Dee River. It includes the metropolitan area of Florence, the county seat with its industrial and urban areas, as well as the small town of Quinby. Interstate Highways 95 and 20 cut through the area west of the city of Florence. Farming interests in the extreme Western part of the area and the Eastern section produce crops of tobacco, corn and soybeans. A sizable amount of this area is wet land or land subject to flooding along Black Creek, Middle Swamp, Jefferies Creek and the large Pee Dee River Swamp. Some of the agricultural soils include Wagram, Norfolk and Goldsboro. Wildlife along the larger swamps include waterfowl, deer, and raccoons.

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

This section of the county joins Darlington County and is bordered on the southwest by the Lynches River and extends eastward to Lake Swamp. Included in this area are the towns of Timmonsville and Cartersville, on U. S. Highway 76 that cuts across the upper portion. Interstate Highway 95 slices through the mid section and U. S. Highway 301 cuts across the lower portion. Sparrow Swamp runs through almost the entire length of Area 2 which along with the Lynches River Swamp and Lake Swamp involve large areas of wet natured or flooded soils. Farming in the better higher elevations produces good crops of tobacco, corn, and soybeans.

Area 3 - Savannah Grove - Peniel - Effingham

Area 3, immediately south of the city of Florence is bordered by Lake Swamp on the west and extends across U. S. Highway 52 to include a section along the Lynches River and a tributary, McCall Branch. The northern boundary is Middle Swamp and the southern boundary mainly the Lynches River.

U. S. Highways 301 and 52 cut through this area of rather flat land with several small branches that drain into the Lynches River. A number of soils with high water tables are present, however, fair crops of tobacco, corn and soybeans are produced on the higher better drained fields of Norfolk, Wagram, and Goldsboro. Some of the wet natured soils are Coxville, Lynchburg and Rains.

Area 4 - Claussen - Evergreen - Willow Creek

This area includes the entire drainage area of Willow Creek and its tributaries which runs through the

center. It extends from the Seaboard Coast Line Railroad on its western border to the Great Pee Dee River on the eastern border and from Jefferies Creek on the north southward to include the drainage area of Cypress Creek. The area is rather flat and contains several wet natured soils such as Lynchburg, Coxville, and Rains. The better drained soils such as Norfolk and Wagram along with drained Goldsboro and the above mentioned soils produce crops as grown in the other areas - mainly tobacco, corn and soybeans.

Area 5 - Olanta - Scranton - Lake City - Byrds Crossroads

In the southwestern corner of the county , this area joins Sumter, Clarendon and Williamsburg Counties on the west and south and extends over to U. S. Highway 52 on its eastern side and includes the town of Lake City and a small area east of Lake City. It extends up to the Lynches River on its northern border.

U. S. Highway 301 cuts across the western side of the area, U. S. Highway 52 across the Eastern side and U. S. Highway 378 runs along its southern edge while the rest of this area is covered with a network of state and county roads. The land is fairly level and includes a number of wet natured soils that need drainage improvements generally, such as Goldsboro, Lynchburg, Coxville, Rains, and Pantego. The Lynches Lake Swamp and Camp Branch section in the center of Area 5 was improved with a drainage channel, the Lynches Lake - Camp Branch Watershed project, completed in 1969. This project provided an outlet for drainage from dozens of farms in the area between Olanta and Scranton.

The farms in this area produce the same crops as the other areas - tobacco, corn, soybeans. In addition, in the Lake City vicinity, several kinds of truck crops are produced such as beans, peas, tomatoes, squash, cucumbers and watermelons. This section of the county along with most of the others has wildlife that includes squirrels, deer, quail, and doves in large numbers.

Area 6 - Friendfield - Coward - Highhill - Camerontown

Area 6 includes the lands immediately east of Coward and Lake City on U. S. Highway 52, and eastward across the Lynches River to lands on the other side of the river drained by several small tributaries. The area extends southward to the Lynches Lake Swamp and northward to the New Hope community. With the Lynches River running north and south through the center of area 6, a large acreage is subject to flooding from it and its tributaries.

The soils are wet natured, in general, and poorly drained - they include Leaf, Coxville, Lynchburg, Rains and Cahaba.

The higher elevation field soils, in lesser acreages, include some Norfolk and Goldsboro. Crops grown in the area are somewhat limited to fair production of corn and soybeans with some tobacco and truck crops on higher field locations.

Area 7 - Hyman - Pamplico - Blossom - Salem

Area 7 joins area 6 on the east side and extends over to the Great Pee Dee River on the eastern side. It includes all the drainage area of Big Swamp and its small tributaries south to where it empties into the Lynches River. Big Swamp flows southward through the center of this area, influences the wetness of all low lying land adjacent to it.

The area is relatively flat with some

depression areas which need drainage improvements. The higher field areas contain soils like Wagram, Norfolk and Goldsboro while the major wooded areas have Duplin, Lynchburg and Rains soils.

This, as well as other areas of the county, is considered highly agricultural, producing good grops of tobacco, corn, soybeans and some truck.

Wildlife in this area abounds including deer, raccoon, squirrel, waterfowl in the Pee Dee Swamp, doves and quail.

Area 8 - Poston - Salem - Vox - Johnsonville

Area 8 is located in the extreme southeastern corner of the county and is bounded on the East by the Great Pee Dee River on the south by Muddy Creek and the Williamsburg County line and joins area 6 and area 7.

The Lynches River and Lynches Lake Swamp traverse the area from east to west and influence a major portion of the lands adjacent to them. A sand mining company has excavated sand on sizable acreages just north of the Lynches River near Johnsonville.

The soils in the area include Norfolk, Wagram, Duplin and Varina in the section north of the river and Chipley, Olanta, and Lakeland south of the river. Like the other areas the main crops grown on the better soil types are tobacco, corn and soybeans. The area is generally flat with low lying lands adjacent to the streams and swamps. Wildlife abounds in the swamps and includes deer, raccoons, squirrels and waterfowl, while on the higher areas there are also quail and doves in good numbers.

FACTORS CONSIDERED IN PREPARATION OF PLAN

The Water Runoff Study was prepared by engineers of the Soil Conservation Service with the assistance of the Florence County Development Board. On-site investigations were made of the outlets for each main canal, and the factors affecting water disposal within the watershed, such as land use, river stages, flooding, and the time of year in which flooding occurs, were studied.

Present land use and anticipated future land use was considered in sizing the drainage ditches for this study. Engineering information available through the Florence Field Office of the Soil Conservation Service was also used, particularly that pertaining to drainage investigations.

U. S. Geological Survey Topographic Maps were used in many areas to determine the general topography within each watershed and to assist in delineation of watersheds. A limited amount of instrument surveying was done in some areas to determine direction of runoff and outlets.

Aerial photographs, scale 1" = 1320', flown in 1969, were used in recording field data and for the preparation of the drainage plan.

Agencies and commercial concerns, having knowledge of specific drainage problems, were consulted in making decisions in certain areas. Also, maps, surveys and plans available from these agencies were used.

In most instances, mains were located along natural drains with modifications in alignment to improve the flow and collection of water. All needed laterals within the watersheds were not located since the purpose

of the study is to locate and size only the main canals which will furnish a means of disposal of run-off from all parts of the watershed. All mains terminate in rivers, creeks or natural outlets at a point where they have adequate capacity and depth.

No attempt was made to locate underground utilities, such as telephone cables, gas pipelines, water mains, and conduits, as a part of this study. However, due consideration must be given to the location of these underground utilities during the preparation of the final plans.

No designs are included for the ditches receiving runoff at the edges of the city of Florence. A Storm Drainage Study was completed for the Greater Florence Planning Area by LBC & W - Harwood Beebe Company in 1974. Reference to this publication can be made for design of these outlets.

Watersheds draining into the county from adjoining counties were included in the design of main canals. The mains, however, are shown beginning at the county line. Attention was given to possible land use changes in adjacent counties that would affect runoff coming into these watersheds.

ENGINEERING CONSIDERATIONS

Engineering considerations for planning, design, construction, maintenance and other items pertinent to the main drainageways and outlets feasibility study are listed below:

Design

This Water Runoff Study was made to estimate the extent of needed main disposal outlets and the physical practicability of drainage in the county. Detailed engineering surveys and designs will be required before any part of the proposed plan can be constructed. All improvements should be made continuous. Layout and construction should begin at the outlet end and continue upstream.

Plans and designs contained in this report do not include a complete study of underground storm sewers near towns found in Areas 1, 2, 5, 6, 7, and 8. Sufficient engineering data was not available on the sewers in these areas to include in this report. Detailed studies will be needed to determine the adequacy of these storm sewers and any additional needs or modifications.

No attempt was made in this study to size culverts. Culverts at railroad and road crossings should be designed to satisfy the minimum requirements based on expected flow. Increases in size of these structures may be desirable to provide an added safety factor for passing runoff in excess of designed flow where future unforeseen improvements are to be made in the vicinity.

The South Carolina Wildlife and Marine Resources Department and other organizations or agencies concerned with environmental protection should be consulted when the ecology of an area may be affected by the construction of main drainage canals.

As previously mentioned under the topic of WILDLIFE, the Federal Water Pollution Control Act Amendment of 1972, Section 404, regulates the placing of fill material in coastal and inland waters and wetlands. Before undertaking any construction in water or wetland areas an application for a Section 404 permit should be made to the nearest district office of the U. S. Army Corps of Engineers.

Acquisition of Rights-of-Way

The means for, and the acquisition of, adequate rights-of-way for the installation of main canals is absolutely essential. The right-of-way must be adequate to meet the width requirements for the channel section, berm, spoil management, and to assure access.

Maintenance of Channels

A well-organized and adequately financed maintenance program is essential for proper maintenance of channels.

Provision for annual maintenance or periodic reconstruction to maintain the effectiveness of the channel must be considered prior to design. Many water disposal projects fail to function as designed and this can be directly attributed to an inadequate maintenance program. Maintenance of designed depth of channels is one of the most important items in a maintenance program. The cost of maintenance may be reduced considerably if provision is made in channel designs for easy access and stabilization of silt-contributing areas, such as ditch side slopes, new road fills and road ditch intersections, immediately following construction.

Obstructions

Construction of fences, walks and other structures that may retard channel flow should not be permitted. Other structures such as culverts, bridge piers, trestles, etc., should be designed to result in minimum interference with the channel flow. Dumping trash, garbage and other debris in channels should be prohibited.

DEFINITION OF TERMS

Brief descriptions of terms used in this report are listed below in alphabetical order.

c.f.s. - Abbreviation for cubic feet per secons; a unit of waterflow sometimes called "second feet."

Infiltration - The entrance of water into surface horizons of soil.

Internal Drainage - The movement of water through the soil profile. The rate is affected by the texture of the surface soil and of the subsoil and by the height of the water table. A wet, deep sand may have slow internal drainage when the water table is high, and rapid internal drainage when the water table is low. A plastic, sandy clay soil may have slow internal drainage regardless of water table height.

Lateral Ditch - A major ditch in a drainage system which serves as a link between the main ditch and the collection system in a segment of the watershed.

Main Canal (Ditch or Channel)- The principal channel which conducts the drainage water from the watershed to the outlet.

Permeability Rate - The rate of movement of water through the soil.

Profile, Soil - A vertical section of the soil through all its horizons and extending into the parent material.

Reach - A length of channel selected for use in hydraulic computations.

Relief - The elevations or inequalities of a land surface, considered collectively.

Runoff, Surface - The total rainfall minus losses from interception, infiltration, evapotranspiration, and surface storage; that which moves across the ground to a stream or depression.

Runoff, Subsurface - Water that infiltrates the soil and reappears as seepage or spring flow.

Soil Drainage - (1) The rapidity and extent of the removal of water from the soil by runoff and flow through the soil to underground spaces. (2) As a condition of the soil, the frequency and duration of periods when the soil is free of saturation. For example, in well-drained soils, the water is removed readily, but not rapidly; in poorly drained soils, the root zone is waterlogged for long periods and the roots of ordinary crop plants cannot get enough oxygen; and in excessively drained soils, the water is removed so completely that most crop plants are damaged by lack of water.

Soil Structure - The arrangement of the individual grains and aggregates that make up the soil mass; may refer to the natural arrangements of the soil when in place and undisturbed or to the soil at any degree of disturbance.

Subsoil - In soils with weak profile development, the subsoil can be defined as the soil below the plowed soil (or its equivalent of surface soil) in which roots normally grow.

Surface Soil - The soil ordinarily moved in tillage or the equivalent in uncultivated soil about six to ten inches in thickness.

Terrace (Geological)- An old alluvial plain, ordinarily flat or undulating, bordering a river, lake or the sea. Stream terraces are frequently called second bottoms, as contrasted to flood plains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.

Texture, Soil - The relative proportions of sand, silt and clay particles in a mass of soil. The basic textural classes, in order of increasing proportions of fine particles are as follows: sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay and clay. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine." A coarse-textured soil is one high in sand content; a fine-textured soil is one high in clay content.

Water-holding Capacity - The ability of a soil to hold water. The capacity (or ability) of soil to hold water against gravity.

Watershed - An area of land from which all water that falls within the area converges toward and discharges past a designated point.

TECHNICAL REFERENCES

C. E. Ramser - FLOW OF WATER IN DRAINAGE CHANNELS - U. S. Department of Agriculture - Technical Bulletin No. 129 - U. S. Government Printing Office - Washington, D. C.

H. W. King - HANDBOOK OF HYDRAULICS - McGraw-Hill Book Company, Inc., New York, N. Y.

War Department, Corps of Engineers - HYDRAULIC TABLES, U. S. Government Printing Office, Washington, D. C.

U. S. Department of Agriculture, Soil Conservation Service - NATIONAL ENGINEERING HANDBOOK - DRAINAGE - Section 16, Chapters 1,2,3,4,5, and 6.

U. S. Department of Agriculture, Soil Conservation Service - NATIONAL ENGINEERING HANDBOOK - HYDRAULICS - Section 5.

U. S. Department of Agriculture, Soil Conservation Service - FIELD DRAINAGE GUIDE FOR SOUTH CAROLINA.

U. S. Department of Commerce, Weather Bureau - TECHNICAL PAPER NO. 40 - RAINFALL FREQUENCY ATLAS OF THE UNITED STATES - U. S. Government Printing Office - Washington, D. C.

U. S. Department of Commerce, Bureau of Public Roads - HYDRAULIC CHARTS FOR THE SELECTION OF HIGHWAY CULVERTS.

U. S. Department of Agriculture, Soil Conservation Service - NATIONAL ENGINEERING HANDBOOK - HYDROLOGY - Section 4.

FEASIBILITY STUDY FOR MAIN DRAINAGE CANALS in Horry County.

FEASIBILITY STUDY FOR MAIN DRAINAGE CANALS in Williamsburg County.

WATER MANAGEMENT STUDY FOR MAIN DRAINAGE CANALS in Dorchester County.

AUTHORITY AND ACKNOWLEDGEMENT

Authority for preparation of the Water Runoff Study for Main Drainageways and Outlets for Florence County is the result of a cooperative agreement entered into on June 7, 1973, by:

Florence County Council -

D. N. Bath, Chairman
R. L. Poston
J. B. McCutcheon
Joe Griffin
G. B. Stokes, Jr.
Herbert T. Floyd
Jerry Keith
F. M. Lynch, Jr.
Cale Yarborough

Florence Soil and Water Conservation District Commissioners -

R. D. McLendon, Chairman
W. D. Boling
John B. Daniels
L. D. Eagles
Jim R. Harwell

Soil Conservation Service - George E. Huey, State Conservationist

Administrative supervision for the Soil Conservation Service -

B. Clayton Graham - former Area Conservationist
John S. Case - Area Conservationist

Direct responsibility for preparation of plans, designs and final report:

Calvin B. Derrick - Civil Engineer, Soil Conservation Service
Thomas L. Hyman - Soil Conservation Technician, Soil Conservation Service
Henry B. Watson - Soil Conservation Technician, Soil Conservation Service

Special technical assistance during all phases of the preparation of the report was given by:

W. Burton Wells, State Conservation Engineer, Soil Conservation Service
James J. Pitts, Soil Scientist, Soil Conservation Service
Albert H. Cole, District Conservationist, Soil Conservation Service

Others who furnished data, information, or services used in the preparation of the report:

U. S. Weather Bureau
U. S. Department of the Interior
South Carolina Highway Department

Assistance in typing tables, charts, and manuscript gratefully acknowledged:

Mrs. Sandra Warren, Clerk Typist, Soil Conservation Service, Florence, S. C.
Mrs. Catherine Pate, Clerk Typist, Soil Conservation Service Area Office
Florence, S. C.

Cartography and Printing:

Fort Worth Cartographic Unit, Soil Conservation Service, Fort Worth, Texas.

EXPLANATION OF ENGINEERING DATA TABLES

The following Engineering Data Tables contain information, listed by areas, for each main canal and lateral watershed.

An explanation of each column in the Engineering Data Sheets is as follows:

Column 1 CANAL NUMBER
Numbering of main canals begin with M-1 and laterals with L-1, in each area.

Column 2 LENGTH IN FEET
Stationing of all mains and laterals begins at the upper end (headwaters) and continues toward the outlet. Mains and laterals are shown in reaches or sections in the data tables for design purposes. Each reach or section reflects a change in water concentration resulting from entrance of lateral drainage.

Column 3 WATERSHED IN ACRES
See definition of terms.

Column 4 DISCHARGE-CUBIC FEET PER SECOND
From appropriate drainage coefficient curves dependent on land use. (See Fig. No. 1)

Column 5a TOP WIDTH IN FEET
All ditches estimated on average 5' depth.

Column 5b BOTTOM WIDTH IN FEET
Self-explanatory.

Column 6 EXCAVATION IN CUBIC YARDS
Self-explanatory.

Column 7 RIGHT-OF-WAY CLEARING IN ACRES
Self-explanatory.

COLUMN 8 REQUIRED RIGHT-OF-WAY WIDTH IN FEET
Minimum width requirements for channel cross section, spoil management, berm width and maintenance access road.

TABLE No. 2

SUMMARY OF ENGINEERING AND DESIGN DATA BY AREAS

Area Number	Length of Canals Feet	Excavation Cubic Yards	Right-of-way Clearing Acres
1	355,000	515,788	467.5
2	559,200	653,661	598.9
3	360,900	486,104	445.0
4	437,600	613,123	548.7
5	398,420	763,171	538.6
6	543,700	593,890	496.0
7	305,900	462,003	368.4
8	277,000	271,813	252.5
County Totals	3,237,720	4,359,553	3715.6

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-1A	1900	80	8	13	3	2812	2.6	60
L-1A	700	20	3	13	3	1036	1.0	60
L-1B	1400	40	5	13	3	2072	1.9	60
M-1B	1300	148	13	13	3	1924	1.8	60
Total-1	5300					7844	7.3	
M-2A	1300	25	3	13	3	1924	1.8	60
Total-2	1300					1924	1.8	
M-3A	3300	47	5	13	3	4884	4.5	60
M-3B	2800	119	12	13	3	4144	3.9	60
L-1A	1500	25	3	13	3	1924	2.1	60
M-3C	1200	172	15	13	3	1776	1.7	60
M-3D	2600	199	17	13	3	3848	3.6	60
Total-3	11,400					16,576	15.8	
M-4A	2300	170	15	13	3	3404	3.1	60
Total-4	2300					3404	3.1	
M-5A	700	60	7	13	3	1036	1.0	60
L-1A	2100	30	7	13	3	3106	2.9	60
M-5B	800	160	13	13	3	1184	1.1	60
Total-5	3600					5326	5.0	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-6A	2200	127	12	13	3	3256	3.0	60
Total-6	2200					3256	3.0	
M-7A	5300	228	19	13	3	7844	7.3	60
M-7B	1400	268	23	13	3	2072	1.9	60
M-7C	700	310	25	13	3	1036	1.0	60
Total-7	7400					10,952	10.2	
M-8A	5600	444	35	13	3	8288	7.7	60
M-8B	1900	534	40	13	3	2812	2.6	60
L-1A	1200	42	4	13	3	1776	1.7	60
L-1B	2000	112	10	13	3	2960	2.8	60
L-1C	900	146	13	13	3	1332	1.2	60
L-1D	700	166	15	13	3	1036	1.0	60
L-2A	2400	180	16	13	3	3552	3.3	60
L-1E	3300	466	36	13	3	4884	4.5	60
M-8C	1000	1032	72	16	6	2040	1.6	70
Total-8	19,000					28,680	26.4	
M-9A	1700	96	9	13	3	2516	2.3	60
M-9B	2200	166	15	13	3	3256	3.0	60
Total-9	3900					5772	5.3	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-10A	1600	52	6	13	3	2368	2.2	60
M-10B	1300	118	10	13	3	1924	1.8	60
Total-10	2900					4292	4.0	
M-11A	3200	156	13	13	3	4736	4.4	60
M-11B		256	Present canal with proper maintenance will be adequate					
Total-11	3200					4736	4.4	
M-12A	1700	88	7	13	3	2516	2.3	60
M-12B	1200	116	12	13	3	1776	1.7	60
Total-12	2900					4292	4.0	
M-13A	2300	48	10	13	3	3404	3.1	60
M-13B	500	248	20	13	3	740	.7	60
Total-13	2800					4144	3.8	
M-14A	3600	160	15	13	3	5328	5.0	60
M-14B	1300	186	17	13	3	1924	1.8	60
Total-14	4900					7252	6.8	
M-15A	1300	40	3	13	3	1924	1.8	60
M-15B	1700	68	7	13	3	2516	2.3	60
Total-15	3000					4440	4.1	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-16A	3400	132	12	13	3	5032	4.7	60
Total-16	3400					5032	4.7	
M-17A	3000	80	8	13	3	4440	4.1	60
M-17B	1300	192	16	13	3	1924	1.8	60
M-17C	800	222	20	13	3	1184	1.1	60
L-1A	3000	135	15	13	3	4440	4.1	60
L-1B	2700	263	23	13	3	3996	3.7	60
M-17D	700	509	40	13	3	1036	1.0	60
Total-17	11,500					17,020	15.8	
M-18A	2100	52	5	13	3	3108	2.9	60
M-18B	1500	84	8	13	3	2220	2.1	60
M-18C	1200	104	10	13	3	1776	1.7	60
M-18D	1500	148	14	13	3	2220	2.1	60
Total-18	6300					9324	8.8	
M-19A	2000	172	15	13	3	2960	2.8	60
M-19B	2400	232	20	13	3	3552	3.3	60
Total-19	4400					6512	6.1	
M-20A	2600	140	13	13	3	3848	3.6	60
M-20B	300	152	17	13	3	444	.5	60
L-1A	700	36	4	13	3	1036	1.0	60
L-1B	2500	100	11	13	3	3700	3.4	60
M-20C	600	276	19	13	3	888	.8	60
Total-20	6700					9916	9.3	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-21A	2000	52	6	13	3	2960	2.8	60
M-21B	1000	100	10	13	3	1480	1.4	60
M-21C	1300	132	12	13	3	1924	1.8	60
M-21D	2000	200	17	Present canal with proper maintenance will be adequate				
L-1A	900	160	14	13	3	1332	1.2	60
L-1B	600	180	16	13	3	888	.8	60
L-1C	1600	228	18	13	3	2368	2.2	60
M-21E	2000	508	39	Present canal with proper maintenance will be adequate				
Total-21	11,400					10,952	10.2	
M-22A	800	47	5	13	3	1184	1.1	60
M-22B	400	128	13	13	3	592	.6	60
M-22C	4100	300	22	13	3	6068	5.6	60
Total-22	5300					7844	7.3	
M-23A	2400	324	26	13	3	3552	3.3	60
M-23B	2600	452	33	13	3	3848	3.6	60
M-23C	2000	537	40	13	3	2960	2.8	60
M-23D	700	549	41	13	3	1036	1.0	60
Total-23	7700					11,396	10.7	
M-24A	3300	88	9	13	3	4884	4.5	60
M-24B	1200	124	Present canal with proper maintenance will be adequate					
Total-24	4500					4884	4.5	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-25A	1300	60	7	13	3	1924	1.8	60
M-25B	1800	104	10	13	3	2664	2.5	60
Total-25	3100					4588	4.3	
M-26A	3300	96	10	13	3	4884	4.5	60
Total-26	3300					4884	4.5	
M-27A	1400	44	5	13	3	2072	1.9	60
Total-27	1400					2072	1.9	
M-28A	800	32	5	13	3	1184	1.1	60
M-28B	1000	56	6	13	3	3150	1.4	60
Total-28	1800					4334	2.5	
M-29A	1800	60	6	13	3	2664	2.5	60
L-1A	700	28	3	13	3	1036	1.0	60
L-1B	1300	52	5	13	3	1924	1.8	60
M-29B	1700	140	13	13	3	2516	2.3	60
Total-29	5500					8140	7.6	
M-30A	1300	92	9	13	3	1924	1.8	60
M-30B	3600	252	20	13	3	5328	5.0	60
Total-30	4900					7252	6.8	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-31A	2200	80	8	13	3	3256	3.0	60
M-31B	900	148	13	13	3	1332	1.2	60
M-31C	400	172	15	13	3	592	.6	60
M-31D	300	200	18	13	3	444	.5	60
M-31E	1100	244	20	13	3	1628	1.6	60
M-31F	1400	332	28	13	3	2072	1.9	60
M-31G	1500	404	30	13	3	2220	2.1	60
L-1A	1300	28	3	13	3	1924	1.8	60
L-1B	2100	76	8	13	3	3108	2.9	60
L-2A	1400	52	43	13	3	3848	1.9	60
M-31H	1900	572	43	13	3	2812	2.6	60
Total-31	14,500					23,236	20.1	
M-32A	1800	116	10	13	3	2664	2.5	60
M-32B	2600	248	20	13	3	3848	3.6	60
M-32C	1200	268	22	13	3	1776	1.7	60
Total-32	5600					8288	7.8	
M-33A	2500	288	24	13	3	3700	3.4	60
M-33B	3600	548	40	13	3	5328	5.0	60
L-1A	900	76	8	13	3	1332	1.2	60
L-1B	3000	164	13	13	3	4440	4.1	60
M-33C	700	744	52	13	4	1169	1.0	65
Total-33	10,700					15,969	14.7	
M-34A	5900	216	18	13	3	8732	8.1	60
Total-34	5900					8732	8.1	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-35A	400	132	11	13	3	592	.6	60
M-35B	1200	294	28	13	3	1776	1.7	60
M-35C	2000	562	40	13	3	2960	2.8	60
M-35D	5000	1562	90	18	8	12,050	8.8	77
M-35E	2700	1770	Present canal with proper maintenance will be adequate					
Total-35	11,300					17,378	13.9	
M-36A		398	30	Present canal with proper maintenance will be adequate				
M-36B	1400	498	32	13	3	2072	1.9	60
L-1A		100	9	Present canal with proper maintenance will be adequate				
L-1B		188	17	Present canal with proper maintenance will be adequate				
L-1C		260	22	Present canal with proper maintenance will be adequate				
L-1D		276	23	Present canal with proper maintenance will be adequate				
M-36C	2600	1074	66	16	6	5304	4.1	70
L-2A	2300	144	10	13	3	3404	3.1	60
M-36D	600	1246	80	17	7	1332	1.0	74
M-36E	800	1258	81	17	7	1776	1.3	74
Total-36	7700					13,888	11.4	
M-37A	2800	176	11	13	3	4144	3.9	60
M-37B	2500	220	17	13	3	3700	3.4	60
M-37C	1300	288	22	13	3	1924	1.8	60
L-1A	1500	112	10	13	3	2220	2.1	60
L-1B	3300	220	18	13	3	4884	4.5	60
M-37D	1700	608	42	13	3	2516	2.3	60
Total-37	13,100					19,388	18.0	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-38A	1800	108	11	13	3	2664	2.5	60
M-38B	2000	144	13	13	3	2960	2.8	60
Total-38	3800					5624	5.3	
M-39A	2700	148	12	13	3	3996	3.7	60
Total-39	2700					3996	3.7	
M-40A	2600	248	18	13	3	3848	3.6	60
M-40B	1700	292	22	13	3	2516	2.3	60
L-1A		292	Present canal with proper maintenance will be adequate					
L-1B		372	Present canal with proper maintenance will be adequate					
M-40C	2500	700	50	14	4	4175	3.7	65
L-2A	700	28	4	13	3	1036	1.0	60
L-2B	2700	132	12	13	3	3996	3.7	60
M-40D	1000	842	59	15	5	1850	1.6	68
Total-40	11,200					17,421	15.9	
M-41A	700	164	14	13	3	1036.	1.0	60
M-41B	2600	330	23	13	3	3848	3.6	60
M-41C	3800	490	35	13	3	5624	5.2	60
Total-41	7100					10,508	9.8	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-42A	700	101	10	13	3	1036	1.0	60
M-42B	4600	321	23	13	3	6808	6.3	60
M-42C	2000	413	33	13	3	2960	2.8	60
Total-42	7300					10,804	10.1	
M-43A	1400	84	8	13	3	2072	1.9	60
M-43B	2700	280	23	13	3	3996	3.7	60
M-43C	1000	329	27	13	3	1480	1.4	60
Total-43	5100					7548	7.0	
M-44A	6100	294	28	13	3	9028	8.4	60
M-44B	1500	370	29	13	3	2220	2.1	60
M-44C	1300	442	35	13	3	1924	1.8	60
Total-44	8900					13,172	6.6	
M-45A	6300	305	23	13	3	9324	8.7	60
M-45B	3800	425	32	13	3	5624	5.2	60
Total-45	10,100					14,948	13.9	
M-46A	2600	216	18	13	3	3848	3.6	60
M-46B	700	242	23	13	3	1036	1.0	60
M-46C	2000	296	25	13	3	2960	2.8	60
M-46D	2100	332	28	13	3	3108	2.9	
Total-46	7400					10,952	10.3	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-47A	1200	160	14	13	3	1776	1.7	60
M-47B	1800	248	20	13	3	2664	2.5	60
Total-47	3000					4440	4.2	
M-48A	4600	208	18	13	3	6808	6.3	60
Total-48	4600					6808	6.3	
M-49A	700	36	4	13	3	1036	1.0	60
M-49B	1200	76	8	13	3	1776	1.7	60
M-49C	2300	212	18	13	3	3404	3.1	60
M-49D	1400	264	Present canal with proper maintenance will be adequate					
Total-49	5600					6216	5.8	
M-50A	1300	28	12	Present canal with proper maintenance will be adequate				
M-50B	500	40	Present canal with proper maintenance will be adequate					
L-1A	1200	28	Present canal with proper maintenance will be adequate					
L-1B	900	43	Present canal with proper maintenance will be adequate					
M-50C	1300	131	12	13	3	1924	1.8	60
Total-50	5200					1924	1.8	
M-51A	1800	200	17	13	3	2664	2.5	60
L-1A	2800	176	15	13	3	4144	3.9	60
M-51B	4000	708	50	14	4	6680	6.0	65
M-51C		796	Present canal with proper maintenance will be adequate					
Total-51	8600					13,488	12.4	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-52A	700	20	2	13	3	1036	1.0	60
L-1A	2600	106	10	13	3	3848	3.6	60
L-1B	1800	134	Present canal with proper maintenance will be adequate					
M-52B	1000	198	13	13	3	1480	1.4	60
Total-52	6100					6364	6.0	
M-53A	1600	100	10	13	3	2368	2.2	60
M-53B	1800	172	16	13	3	2664	2.5	60
Total-53	3400					5032	4.7	
M-54A	2000	248	20	13	3	2960	2.8	60
M-54B	1900	448	35	13	3	2812	2.6	60
Total-54	3900					5772	5.4	
M-55A	2300	60	6	13	3	3404	3.1	60
Total-55	2300					3404	3.1	
M-56A	500	156	13	13	3	740	.7	60
M-56B	1700	252	20	13	3	2516	2.3	60
M-56C	1400	304	23	13	3	2072	1.9	60
M-56D	1100	328	25	13	3	1628	1.6	60
Total-56	4700					6956	6.5	

ENGINEERING AND DESIGN DATA
Area 1 - Florence - Mars Bluff - Quinby

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-57A	2500	116	10	13	3	3700	3.4	60
M-57B	2800	123	16	13	3	4144	3.9	60
M-57C	1900	269	22	13	3	2812	2.6	60
M-57D	1600	317	25	13	3	2368	2.2	60
Total-57	8800					13,024	12.1	
M-58A	2000	140	13	13	3	2960	2.8	60
M-58B	1800	200	17	13	3	2664	2.5	60
M-58C		248	Present canal with proper maintenance will be adequate					
Total-58	3800					5624	5.3	
M-59A	3300	180	16	13	3	4884	4.5	60
M-59B	2000	248	21	13	3	2960	2.8	60
Total-59	5300					7844	7.3	
Area-1 Grand Total	355,000					515,788	467.5	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-1A	2600	110	10	13	3	3848	3.6	60
M-1B	1800	182	15	13	3	2664	2.5	60
Total-1	4400					6512	6.1	
M-2A	1800	112	10	13	3	2664	2.5	60
M-2B	800	128	13	13	3	1184	1.1	60
L-1A	1600	148	14	13	3	2368	2.2	60
L-1B	1100	180	16	13	3	1628	1.6	60
M-2C	3000	404	30	13	3	4440	4.1	60
Total-2	8300					12,284	11.5	
M-3A	2100	176	15	13	3	3108	2.9	60
M-3B	1300	208	18	13	3	1924	1.8	60
M-3C	1500	220	19	13	3	2220	2.1	60
L-1A	1800	64	7	13	3	2664	2.5	60
L-1B	800	112	14	13	3	1184	1.1	60
L-1C	800	140	14	13	3	1184	1.1	60
M-3D	2500	418	33	13	3	3700	3.4	60
Total-3	10,800					15,984	14.9	
M-4A	3300	176	15	13	3	4884	4.5	60
M-4B	1200	192	18	13	3	1776	1.7	60
Total-4	4500					6660	6.2	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-5A	2600	176	15	13	3	3848	3.6	60
M-5B	4000	364	Present canal with proper maintenance will be adequate					
Total-5	6600					3848	3.6	
M-6A	2600	69	7	13	3	3848	3.6	60
L-1A	4100	124	12	13	3	6068	5.6	60
M-6B	900	213	17	13	3	1332	1.2	60
M-6C	400	217	17	13	3	592	0.6	60
L-2A	700	28	4	13	3	1036	1.0	60
L-2B	600	38	5	13	3	888	0.8	60
M-6D	200	259	22	13	3	296	0.4	60
Total-6	9500					14,060	13.2	
M-7A	300	36	Present canal with proper maintenance will be adequate					
M-7B	4200	160	Present canal with proper maintenance will be adequate					
M-7C	2000	210	Present canal with proper maintenance will be adequate					
Total-7	6500							
M-8A	2400	70	7	13	3	3552	3.3	60
M-8B	800	102	Present canal with proper maintenance will be adequate					
M-8C	1600	160	Present canal with proper maintenance will be adequate					
Total-8	4800					3552	3.3	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-9A	4000	172	15	13	3	5920	5.5	60
M-9B	700	182	17	13	3	1036	1.0	60
M-9C	300	252	22	13	3	444	0.5	60
Total-9	5000					7400	7.0	
M-10A	2800	100	Present canal with proper maintenance will be adequate					
M-10B	800	115	Present canal with proper maintenance will be adequate					
Total-10	3600							
M-11A	2000	292	25	13	3	444	0.4	60
M-11B	4400	532	Present canal with proper maintenance will be adequate					
Total-11	6400					444	0.4	
M-12A	2600	90	9	13	3	3848	3.6	60
M-12B	800	112	11	13	3	1184	1.1	60
Total-12	3400					5032	4.7	
M-13A	5700	117	11	13	3	8436	7.9	60
M-13B	200	125	13	13	3	296	0.4	60
Total-13	5900					8732	8.3	
M-14A	3400	280	23	13	3	5032	4.7	60
M-14B	2000	376	30	13	3	2960	2.8	60
Total-14	5400					7992	7.5	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-15A	800	12	Present canal with proper maintenance will be adequate					
L-1A	700	12	Present canal with proper maintenance will be adequate					
L-2A	1700	58	Present canal with proper maintenance will be adequate					
L-1B	2400	118	Present canal with proper maintenance will be adequate					
M-15B	500	140	Present canal with proper maintenance will be adequate					
M-15C	300	148	Present canal with proper maintenance will be adequate					
Total-15	6400							
M-16A	3700	128	12	13	3	5476	5.1	60
M-16B	5600	382	30	13	3	8288	7.7	60
M-16C	2000	432	34	13	3	2960	2.8	60
Total-16	11,300					16,724	15.6	
M-17A	3100	140	13	13	3	4588	4.3	60
M-17B	1400	198	17	13	3	2072	1.9	60
Total-17	4500					6660	6.2	
M-18A	5600	264	22	13	3	8288	7.7	60
L-1A	4000	104	10	13	3	5920	5.5	60
M-18B	800	420	33	13	3	1184	1.1	60
M-18C	1900	534	40	13	3	2812	2.6	60
Total-18	12,300					18,204	16.9	
M-19A	2100	44	5	13	3	3106	0.6	60
L-1A	1200	90	9	13	3	1776	1.7	60

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-1B	3700	150	14	13	3	5476	5.1	60
M-19B	1700	214	18	13	3	2516	2.3	60
M-19C	1200	250	20	13	3	1776	1.7	60
M-19D	400	258	21	13	3	592	0.6	60
Total-19	10,300					15,242	12.0	
L-1A	2900	124	Present canal with proper maintenance will be adequate					
L-2A	3400	92	Present canal with proper maintenance will be adequate					
L-1B	400	222	Present canal with proper maintenance will be adequate					
M-20A	3700	170	Present canal with proper maintenance will be adequate					
M-20B	2000	442	Present canal with proper maintenance will be adequate					
Total-20	12,400							
M-21A	1300	88	9	13	3	1924	1.8	60
M-21B	3300	252	21	13	3	4884	4.5	60
M-21C	200	262	22	13	3	296	0.4	60
Total-21	4800					7104	6.7	
M-22A	900	102	Present canal with proper maintenance will be adequate					
M-22B	1300	155	Present canal with proper maintenance will be adequate					
Total-22	2200							
M-23A	1200	16	Present canal with proper maintenance will be adequate					
Total-23	1200							

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-24A	3400	140	13	13	3	5032	4.7	60
M-24B	1300	166	15	13	3	1924	1.4	60
Total-24	4700					6956	6.1	
M-25A	1800	96	9	13	3	2664	2.5	60
M-25B	1200	116	11	13	3	1776	1.7	60
L-1A	800	12	2	13	3	1184	1.1	60
M-25C	1300	156	15	13	3	1924	1.8	60
Total-25	5100					7548	7.1	
M-26A	1800	80	Present canal with proper maintenance will be adequate					
M-26B	1600	112	Present canal with proper maintenance will be adequate					
Total-26	3400							
M-27A	1400	70	7	13	3	2072	1.9	60
M-27B	700	92	9	13	3	1036	1.0	60
M-27C	300	102	10	13	3	444	0.5	60
Total-27	2400					3552	3.4	
M-28A	3300	212	18	13	3	4884	4.5	60
M-28B	500	227	20	13	3	740	0.7	60
Total-28	3800					5624	5.2	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No.. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-29A	2000	216	Present canal with proper maintenance will be adequate					
M-29B	2000	370	Present canal with proper maintenance will be adequate					
Total-29	4000							
M-30A	1800	74	7	13	3	2664	2.5	60
M-30B	3300	238	22	13	3	4884	4.5	60
Total-30	5100					7548	7.0	
M-31A	2600	92	7	13	3	3848	3.6	60
L-1A	2300	52	6	13	3	3404	3.1	60
M-31B	1200	184	15	13	3	1776	1.7	60
M-31C	300	166	15	13	3	444	0.5	60
Total-31	6400					9472	8.9	
M-32A	4900	242	20	13	3	7252	6.7	60
M-32B	700	256	22	13	3	1036	1.0	60
Total-32	5600					8288	7.7	
M-33A	4200	180	14	13	3	6216	5.8	60
M-33B	1300	196	18	13	3	1924	1.8	60
Total-33	5500					8140	7.6	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-34A	2100	164	Present canal with proper maintenance will be adequate					
M-34B	1600	196	Present canal with proper maintenance will be adequate					
Total-34	3700							
M-35A	3500	158	14	13	3	5180	4.8	60
M-35B	1300	180	16	13	3	1924	1.8	60
Total-35	4800					7104	6.6	
M-36A	1200	58	Present canal with proper maintenance will be adequate					
M-36B	4400	260	Present canal with proper maintenance will be adequate					
M-36C	1300	286	Present canal with proper maintenance will be adequate					
Total-36	6900							
M-37A	2500	160	14	13	3	3700	3.4	60
M-37B	1000	185	17	13	3	1480	1.4	60
Total-37	3500					5180	4.8	
M-38A	2000	100	10	13	3	2960	2.8	60
L-1A	700	184	17	13	3	1036	1.0	60
L-1B	1600	207	18	13	3	3552	3.3	60
M-38B	700	323	26	13	3	1036	1.0	60
M-38C	3000	363	29	13	3	4440	4.1	60
Total-38	8000					13,024	12.2	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-39A	1800	40	7	13	3	2664	2.5	60
L-1A	2000	36	4	13	3	2960	2.8	60
M-39B	800	96	12	13	3	1184	1.1	60
M-39C	1300	146	15	13	3	1924	1.8	60
M-39D	1600	176	18	13	3	2368	2.2	60
Total-39	7500					11,100	10.4	
M-40A	2400	120	Present canal with proper maintenance will be adequate					
L-1A	2100	70	7	13	3	3108	2.9	60
M-40B	1200	215	Present canal with proper maintenance will be adequate					
M-40C	2800	279	Present canal with proper maintenance will be adequate					
Total-40	8500					3108	2.9	
M-41A	2000	180	17	13	3	2960	2.8	60
L-1A	1700	88	8	13	3	2516	2.3	60
M-41B	2000	353	28	13	3	2960	2.8	60
L-2A	1300	34	4	13	3	1924	1.8	60
L-2B	1400	66	7	13	3	2072	1.9	60
M-41C	800	429	34	13	3	1184	1.1	60
Total-41	9200					13,616	12.7	
M-42A	1200	59	6	13	3	1776	1.7	60
M-42B	2900	175	15	13	3	4292	4.0	60
Total-42	4100					6068	5.7	

ENGINEERING AND DESIGN DATA
Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-43A	3900	78	8	13	3	5772	5.4	60
M-43B	1200	135	12	13	3	1776	1.7	60
Total-43	5100					7548	7.1	
M-44A	3500	132	12	13	3	5180	4.8	60
Total-44	3500					5180	4.8	
M-45A	2500	92	9	13	3	3700	3.4	60
Total-45	2500					3700	3.4	
M-46A	1400	44	5	13	3	2072	1.9	60
M-46B	4500	224	Present canal with proper maintenance will be adequate					
Total-46	5900					2072	1.9	
M-47A	3700	82	8	13	3	5476	5.1	60
Total-47	3700					5476	5.1	
M-48A	4000	140	11	13	3	5920	5.5	60
L-1A	1300	60	6	13	3	1924	1.8	60
M-48B	400	206	16	13	3	888	0.8	60
L-2A	600	28	4	13	3	888	0.8	60
L-2B	900	52	6	13	3	1332	1.2	60
M-48C	500	288	24	13	3	740	0.7	60
M-48D	700	298	25	13	3	1036	1.0	60
Total-48	8400					12,728	11.8	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-49A	2800	112	11	13	3	4144	3.9	60
M-49B	600	128	13	13	3	888	0.8	60
Total-49	3400					5032	4.7	
M-50A	3200	138	13	13	3	4736	4.4	60
L-1A	2500	190	23	13	3	3700	3.4	60
M-50B	500	374	25	13	3	740	0.7	60
M-50C	1600	450	34	13	3	1924	1.8	60
M-50D	900	476	37	13	3	1332	1.2	60
L-2A	1600	86	8	13	3	2368	2.2	60
L-2B	700	93	9	13	3	1036	1.0	60
M-50E	500	593	44	14	4	835	0.7	65
M-50F	1400	641	46	14	4	2338	2.0	65
L-3A	2400	84	8	13	3	3552	3.3	60
L-3B	4900	308	18	13	3	7252	6.7	60
M-50G	400	959	64	14	4	668	0.5	65
Total-50	20,600					30,481	27.9	
M-51A	3700	296	Present canal with proper maintenance will be adequate					
M-51B	2900	404	Present canal with proper maintenance will be adequate					
Total-51	6600							
M-52A	4100	260	22	13	3	5476	5.1	60
M-52B	4300	480	34	13	3	6364	5.9	60
M-52C	900	525	40	13	3	1332	1.2	60

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-1A	4000	116	11	13	3	5920	5.5	60
M-52D	2200	755	52	14	4	3674	3.0	65
L-2A	1000	14	2	13	3	1480	1.4	60
L-3A	3000	172	Present canal with proper maintenance will be adequate					
L-3B	400	177	Present canal with proper maintenance will be adequate					
L-2B	1600	239	20	13	3	2368	2.2	60
L-2C	1300	277	Present canal with proper maintenance will be adequate					
L-2D	2100	407	Present canal with proper maintenance will be adequate					
L-2E	1700	461	Present canal with proper maintenance will be adequate					
L-2F	900	483	Present canal with proper maintenance will be adequate					
M-52E	4200	1438	90	18	8	10,122	7.4	77
L-4A	5300	214	18	13	3	7844	7.3	60
M-52F	1600	1728	100	19	9	4144	2.9	80
Total-52	38,600					48,724	41.9	
M-53A	2400	140	13	13	3	3552	3.3	60
M-53B	1700	202	17	13	3	2516	2.3	60
Total-53	4100					6068	5.6	
M-54A	1300	380	Present canal with proper maintenance will be adequate					
M-54B	4000	772	Present canal with proper maintenance will be adequate					
M-54C	5000	1484	Present canal with proper maintenance will be adequate					
M-54D	1100	1516	Present canal with proper maintenance will be adequate					
Total-54	11,400							

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-55A	300	268	Present canal with proper maintenance will be adequate					
M-55B	2000	466	Present canal with proper maintenance will be adequate					
M-55C	3400	608	Present canal with proper maintenance will be adequate					
M-55D	1300	676	Present canal with proper maintenance will be adequate					
Total-55	7000							
M-56A	600	14	2	13	3	888	0.8	60
M-56B	700	39	4	13	3	1036	1.0	60
M-56C	800	53	6	13	3	1184	1.1	60
M-56D	2400	139	13	13	3	3552	3.3	60
Total-56	4500					6660	6.2	
M-57A	5800	420	34	13	3	8584	8.0	60
M-57B	900	452	36	13	3	1332	1.2	60
Total-57	6700					9916	9.2	
M-58A	5500	412	34	13	3	8140	7.6	60
M-58B	3800	674	48	14	4	6346	5.6	65
M-58C	4600	1112	75	16	6	9384	7.3	70
M-58D	3200	1353	Present canal with proper maintenance will be adequate					
M-58E	2800	1493	Present canal with proper maintenance will be adequate					
M-58F	500	1511	Present canal with proper maintenance will be adequate					
Total-58	20,400					23,870	20.5	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-59A	500	17	2	13	3	740	0.7	60
M-59B	1000	49	5	13	3	1776	1.7	60
M-59C	2400	104	10	13	3	3552	3.3	60
Total-59	3900					6068	5.7	
M-60A	500	34	Present canal with proper maintenance will be adequate					
M-60B	1800	82	Present canal with proper maintenance will be adequate					
Total-60	2300							
M-61A	2200	130	12	13	3	2960	2.8	60
M-61B	2000	195	Present canal with proper maintenance will be adequate					
Total-61	2200					2960	2.8	
M-62A	1400	54	6	13	3	2072	1.9	60
M-62B	1700	81	8	13	3	2516	2.3	60
Total-62	3100					4588	4.2	
M-63A	5600	246	20	13	3	7844	7.3	60
M-63B	2000	278	23	13	3	2368	2.2	60
Total-63	7600					10,212	9.5	
M-64A	2600	150	14	13	3	3448	3.6	60
M-64B	2000	196	17	13	3	2960	2.8	60
Total-64	4600					6808	6.4	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-65A	1800	308	25	13	3	2664	2.5	60
L-1A	2600	62	6	13	3	3848	3.6	60
L-1B	1300	92	9	13	3	1924	1.8	60
M-65B	2900	712	52	14	4	4843	4.3	65
M-65C	5000	1044	70	16	6	10,200	8.0	70
Total-65	13,600					23,479	20.2	
M-66A	1100	36	3	13	3	1628	1.6	60
L-1A	5300	302	23	13	3	7844	7.3	60
L-1B	1000	318	25	13	3	1480	1.4	60
M-66B	100	360	28	13	3	148	0.3	60
M-66C	3000	470	36	13	3	4440	4.1	60
M-66D	800	491	38	13	3	1480	1.4	60
Total-66	11,300					17,020	16.1	
M-67A	1600	38	4	13	3	2368	2.2	60
L-1A	3700	280	20	13	3	5476	5.1	60
M-67B	2100	348	29	13	3	3108	2.9	60
L-2A	3400	152	14	13	3	5032	4.7	60
L-2B	3000	256	22	13	3	4440	4.1	60
M-67C	1200	734	51	14	4	2004	1.7	65
M-67D	300	742	52	14	4	668	0.4	65
Total-67	15,300					23,096	21.1	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-68A	4600	424	31	13	3	6808	6.3	60
M-68B	300	433	32	13	3	444	0.5	60
Total-68	4900					7252	6.8	
M-69A	500	62	6	13	3	740	0.7	60
M-69B	2200	119	11	13	3	3256	3.0	60
L-1A	2600	88	Present canal with proper maintenance will be adequate					
M-69C	800	241	20	13	3	1184	1.1	60
M-69D	500	273	Present canal with proper maintenance will be adequate					
M-69E	800	302	Present canal with proper maintenance will be adequate					
L-2A	1300	36	Present canal with proper maintenance will be adequate					
L-2B	400	44	Present canal with proper maintenance will be adequate					
L-3A	900	50	5	13	3	1332	1.2	60
L-3B	3300	146	13	13	3	4884	4.5	60
L-3C	500	154	14	13	3	740	0.7	60
M-69F	1600	550	40	13	3	2368	2.2	60
M-69G	1600	592	42	13	3	2368	2.2	60
Total-69	17,000					16,872	15.6	
M-70A	1700	72	7	13	3	2516	2.3	60
M-70B	3400	256	21	13	3	5032	4.7	60
M-70C	2200	322	26	13	3	2368	2.2	60
M-70D	4500	554	41	13	3	6216	5.8	60
M-70E	6300	790	52	14	4	10,020	8.9	65
Total-70	18,100					26,152	23.9	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-71A	6000	250	20	13	3	8140	7.6	60
Total-71	6000					8140	7.6	
M-72A	4500	254	20	13	3	6068	5.6	60
Total-72	4500					6068	5.6	
M-73A	6000	210	18	13	3	8880	8.3	60
M-73B	3700	252	20	13	3	5476	5.1	60
Total-73	9700					14,356	13.4	
M-74A	1000	26	3	13	3	1480	1.4	60
M-74B	1300	60	6	13	3	1924	1.8	60
L-1A	2600	92	9	13	3	3848	3.6	60
L-1B	1100	312	26	13	3	1628	1.6	60
L-1C	1500	422	33	13	3	2220	2.1	60
L-1D	1300	472	36	13	3	1924	1.8	60
L-1E	1800	524	39	13	3	2664	2.5	60
M-74C	1300	664	43	13	3	1924	1.8	60
M-74D	1200	696	50	13	4	2004	1.8	75
$L-2_A$	2900	60	6	13	3	4292	4.0	60
M-74E	1700	856	59	15	5	3145	2.6	68
Total-74	17,700					27,053	25.0	

ENGINEERING AND DESIGN DATA

Area 2 - Timmonsville - Cartersville - Sardis - Cusaac Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-75A	900	12	Present canal with proper maintenance will be adequate					
L-1A	800	18	2	13	3	1184	1.1	60
L-1B	800	30	4	13	3	1184	1.1	60
M-75B	2400	59	Present canal with proper maintenance will be adequate					
Total-75	4900					2368	2.2	
M-76A	500	72	6	13	3	740	0.7	60
M-76B	2800	168	14	13	3	4144	3.9	60
Total-76	3300					4884	4.6	
M-77A	2800	90	9	13	3	4144	3.9	60
M-77B	1300	158	14	13	3	1924	1.8	60
Total-77	4100					6068	5.7	
Area-2 Grand Total	559,200					653,661	598.9	

ENGINEERING AND DESIGN DATA
Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-1A	4600	592	31	13	3	6808	6.3	60
M-1B	1900	656	37	13	3	2812	2.6	60
Total-1	6500					9620	8.9	
M-2A		400	Present canal with proper maintenance will be adequate					
M-2B	3300	620	43	13	3	4884	4.5	60
L-1A	2300	150	14	13	3	3404	3.1	60
L-1B	900	160	15	13	3	1332	1.2	60
M-2C	2300	900	59	13	5	4255	3.6	68
M-2D	1400	930	59	13	5	2590	2.1	68
Total-2	10,200					16,465	14.5	
M-3A	4100	226	19	13	3	6068	5.6	60
M-3B	700	246	21	13	3	1036	1.0	60
Total-3	4800					7104	6.6	
M-4A	1400	152	8	13	3	2072	1.7	60
L-1A	1900	308	25	13	3	2812	2.6	60
L-1B	2100	376	27	13	3	3108	2.9	60
M-4B	3700	1188	75	16	6	5548	5.9	70
M-4C	3400	1408	90	18	8	8194	6.0	77
L-2A	1000	48	5	13	3	1480	1.4	60
L-2B	1900	276	22	13	3	2812	2.6	60
L-3A	3900	288	23	13	3	5772	5.4	60
L-2C	1500	644	43	13	3	2220	2.1	60
L-2D	3600	824	53	13	3	5328	5.0	60

ENGINEERING AND DESIGN DATA
Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-4D		1080	Present canal with proper maintenance will be adequate					
M-4E		1150	Present canal with proper maintenance will be adequate					
Total-4	24,400					39,346	35.6	
M-5A	7300	460	35	13	3	10,804	10.0	60
M-5B	4600	696	50	13	3	6808	6.3	60
L-1A	5600	288	25	13	3	8288	7.7	60
M-5C	2500	1144	75	15	5	4625	3.9	68
L-2A	3800	180	18	13	3	5624	5.2	60
L-2B	1900	248	20	13	3	2812	2.6	60
L-2C	2000	290	Present canal with proper maintenance will be adequate					
M-5D	1100	1514	95	16	6	2244	1.8	70
Total-5	28,800					41,205	37.5	
M-6A	4300	539	39	13	3	6364	5.9	60
M-6B	4300	775	50	13	3	6364	5.9	60
M-6C	5200	1539	90	16	6	10,608	8.3	70
M-6D	800	1579	105	17	7	1776	1.3	74
M-6E	4500	2398	150	22	12	14,175	9.1	89
M-6F	1200	2462	169	22	12	3780	2.4	89
L-1A	2000	272	22	13	3	2960	5.5	60
L-1B	1300	298	25	13	3	1924	1.8	60
M-6G	3600	3080	195	26	16	14,004	8.4	102
Total-6	27,200					61,955	48.6	

ENGINEERING AND DESIGN DATA
Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-7A	2500	320	25	13	3	3700	3.4	60
M-7B	3200	516	38	13	3	4736	4.4	60
M-7C	1300	592	43	13	3	1924	1.8	60
M-7D	3300	780	59	15	5	6105	5.1	68
L-1A	1300	56	Present canal with proper maintenance will be adequate					
L-2A	5200	440	Present canal with proper maintenance will be adequate					
L-1B	4200	596	Present canal with proper maintenance will be adequate					
L-1C	6800	1088	Present canal with proper maintenance will be adequate					
M-7E	2600	2232	130	22	12	8190	5.1	89
M-7F	2800	2412	140	24	14	9856	6.1	95
Total-7	33,200					15,700	25.9	
M-8A	3300	152	13	13	3	4884	4.5	60
Total-8	3300					4884	4.5	
M-9A	4900	428	30	13	3	7252	6.7	60
M-9B	4100	676	47	14	4	6847	6.1	65
Total-9	9000					13,320	12.8	
M-10A	1200	84	7	13	3	1776	1.7	60
M-10B	2600	212	15	13	3	3848	3.6	60
Total-10	3800					5624	5.3	

ENGINEERING AND DESIGN DATA
Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-11A	5100	242	22	13	3	7548	3.7	60
M-11B	1900	298	23	13	3	2812	1.4	60
Total-11	7000					10,360	5.1	
M-12A	3000	160	13	13	3	4440	4.1	60
M-12B	2600	340	Present canal with proper maintenance will be adequate					
Total-12	5600					4440	4.1	
M-13A	3300	312	25	13	3	4884	4.5	60
M-13B	4300	620	43	13	3	6364	6.6	60
L-1A	3200	264	23	13	3	4736	4.4	60
L-1B	2400	434	38	13	3	3552	2.6	60
M-13C	1800	1139	70	16	6	3672	2.9	70
M-13D	3200	1559	99	17	7	7104	5.4	74
M-13E	700	1587	100	17	7	1554	1.1	74
Total-13	18,900					31,866	27.5	
M-14A	7800	336	26	13	3	11,544	10.8	60
L-1A	4900	308	24	13	3	7252	6.7	60
M-14B	1000	713	50	14	4	1670	1.5	65
M-14C	2100	999	Present canal with proper maintenance will be adequate					
Total-14	15,800					20,466	19.0	

ENGINEERING AND DESIGN DATA
Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-15A	2000	260	22	13	3	2960	2.8	60
M-15B	1600	320	25	13	3	2368	2.2	60
M-15C	2000	528	40	13	3	2960	2.8	60
M-15D	4600	812	55	13	3	6808	6.3	60
L-1A	3200	928	10	13	3	4736	4.4	60
M-15E		1088	Present canal with proper maintenance will be adequate					
Total-15	13,400					19,832	18.5	
M-16A	2600	148	12	13	3	3848	3.6	60
L-1A	6200	340	38	13	3	9176	8.6	60
M-16B	2000	620	43	13	3	2960	2.8	60
M-16C	6500	1020	65	14	4	10,855	9.0	60
M-16D	2400	1108	75	15	5	4440	3.7	68
Total-16	19,700					31,279	27.7	
M-17A	5400	360	35	13	3	7992	7.4	60
Total-17	5400					7992	7.4	
M-18A	7300	432	32	13	3	10,804	10.0	60
Total-18	7300					10,804	10.0	
M-19A	6700	512	39	13	3	9916	9.3	60
Total-19	6700					9916	9.3	

ENGINEERING AND DESIGN DATA

Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-20A	2000	136	22	13	3	2960	2.8	60
M-20B	3800	402	33	13	3	5624	5.2	60
Total-20	5800					8584	8.0	
M-21A	2600	136	12	13	3	3848	3.6	60
M-21B	1400	196	25	13	3	2072	1.9	60
L-1A	2000	90	10	13	3	2960	2.8	60
M-21C	1000	316	35	13	3	1480	1.4	60
Total-21	7000					10,360	9.7	
M-22A	1000	252	18	13	3	1480	1.4	60
M-22B	2300	364	25	13	3	3404	3.1	60
M-22C	4100	516	38	13	3	6068	5.6	60
Total-22	7400					10,952	10.1	
M-23A	2000	126	Present canal with proper maintenance will be adequate					
M-23B	1500	166	Present canal with proper maintenance will be adequate					
Total-23	3500							
M-24A	2300	88	9	13	3	3404	3.1	60
L-1A	2600	172	16	13	3	3848	3.6	60
M-24B	2600	444	35	13	3	3848	3.6	60
M-24C	3000	588	41	13	3	4440	4.1	60

ENGINEERING AND DESIGN DATA
Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-24D	2000	680	48	14	4	2960	3.0	65
M-24E	3100	796	57	15	5	4588	4.9	68
Total-24	15,600					23,088	22.3	
M-25A	2000	260	21	13	3	2960	2.8	60
M-25B	3800	462	35	13	3	5624	5.2	60
M-25C	1300	507	41	13	3	1924	1.8	60
Total-25	7100					10,508	9.8	
M-26A	2500	160	14	13	3	3700	3.4	60
M-26B	1800	200	17	13	3	2664	2.5	60
Total-26	4300					6364	5.9	
M-27A	2600	685	49	14	4	4342	3.9	65
M-27B	2000	765	54	15	5	3700	3.1	68
Total-27	4600					8042	7.0	
M-28A	9300	572	Present canal with proper maintenance will be adequate					
Total-28	9300							

ENGINEERING AND DESIGN DATA
Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-29A	1200	40	12	13	3	1776	1.7	60
M-29B	2300	200	23	13	3	3404	3.1	60
M-29C	2600	361	26	13	3	3848	3.6	60
Total-29	6100					9028	8.4	
M-30A	7300	472	40	13	3	10,804	10.0	60
M-30B	2600	600	43	13	3	3848	3.6	60
Total-30	9900					14,652	13.6	
M-31A	2600	200	18	13	3	3848	4.0	60
Total-31	2600					3848	4.0	
M-32A	2800	68	7	13	3	4144	3.9	60
M-32B	800	138	11	13	3	1184	1.1	60
Total-32	3600					5328	5.0	
M-33A	1300	30	3	13	3	1924	1.8	60
M-33B	2000	60	2	13	3	2960	2.8	60
Total-33	3300					4884	4.6	
M-34A	2000	85	9	13	3	2960	2.8	60
Total-34	2000					2960	2.8	

ENGINEERING AND DESIGN DATA
Area 3 - Savannah Grove - Peniel - Effingham

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-35A	5300	420	Present canal with proper maintenance will be adequate					
Total-35	5300							
M-36A	5300	360	Present canal with proper maintenance will be adequate					
Total-36	5300							
M-37A	2800	224	23	13	3	4144	3.9	60
L-1A	2600	70	Present canal with proper maintenance will be adequate					
L-1B	1000	102	Present canal with proper maintenance will be adequate					
M-37B	800	358	37	13	3	1184	1.1	60
Total-37	7200					5328	5.0	
Area-3 Grand Total	360,900					486,104	445.0	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-1A	4800	388	30	13	3	7104	6.6	60
L-1A	4900	332	28	13	3	7252	6.7	60
M-1B	4900	1240	Present canal with proper maintenance will be adequate					
M-1C	1700	1264	Present canal with proper maintenance will be adequate					
Total-1	16,300					14,356	13.3	
M-2A	4900	280	24	13	3	7252	6.7	60
M-2B	2000	322	27	13	3	2960	2.8	60
Total-2	6900					10,212	9.5	
M-3A	1200	56	7	13	3	1776	1.7	60
M-3B	3000	144	14	13	3	4440	4.1	60
Total-3	4200					6216	5.8	
M-4A	5300	436	35	13	3	8732	7.3	60
M-4B	1000	446	35	13	3	1480	1.4	60
L-1A	3900	380	Present canal with proper maintenance will be adequate					
L-1B	2400	456	Present canal with proper maintenance will be adequate					
L-1C	700	460	Present canal with proper maintenance will be adequate					
M-4C	1200	930	59	15	5	2220	1.9	68
M-4D	2100	1118	Present canal with proper maintenance will be adequate					
M-4E	500	1142	Present canal with proper maintenance will be adequate					
Total-4	17,100					12,432	10.6	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-5A	1600	204	Present canal with proper maintenance will be adequate					
M-5B	600	244	Present canal with proper maintenance will be adequate					
L-1A	3300	128	Present canal with proper maintenance will be adequate					
M-5C	4000	584	Present canal with proper maintenance will be adequate					
M-5D	1300	612	Present canal with proper maintenance will be adequate					
Total-5	10,800							
M-6A	2400	76	Present canal with proper maintenance will be adequate					
L-1A	1400	36	Present canal with proper maintenance will be adequate					
M-6B	1000	128	Present canal with proper maintenance will be adequate					
L-2A	1000	84	Present canal with proper maintenance will be adequate					
M-6C	700	328	Present canal with proper maintenance will be adequate					
M-6D	600	344	Present canal with proper maintenance will be adequate					
Total-6	7100							
M-7A	3000	140	14	13	3	4440	4.1	60
M-7B	4900	352	27	13	3	7252	6.7	60
M-7C	1400	400	30	13	3	2072	1.9	60
Total-7	9300					13,764	12.7	
M-8A	2500	160	15	13	3	3700	3.4	60
M-8B	1500	220	19	13	3	2220	2.1	60
Total-8	4000					5920	5.5	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-9A	4200	311	23	13	3	6216	5.8	60
M-9B	2200	447	35	13	3	3256	3.0	60
L-1A	600	80	8	13	3	888	0.8	60
L-1B	1300	108	10	13	3	1924	1.8	60
M-9C	800	623	48	14	4	1336	1.2	65
M-9D	1900	811	59	15	5	3515	3.0	68
M-9E	3300	947	62	16	6	6732	5.3	70
L-2A	3200	300	25	13	3	4736	4.4	60
M-9F	2200	1463	90	18	8	5302	3.9	77
Total-9	19,700					33,905	29.2	
M-10A	1700	640	43	13	3	2516	2.3	60
M-10B	4000	980	61	16	6	8160	6.4	70
Total-10	5700					10,676	8.7	
M-11A	2100	165	18	13	3	3108	2.9	60
M-11B	3000	345	30	13	3	4440	4.1	60
L-1A	1300	56	27	13	3	1924	1.8	60
L-1B	2500	112	11	13	3	3700	3.4	60
M-11C	2200	645	59	15	5	4070	3.4	68
Total-11	11,100					17,242	15.6	
M-12A	2600	176	17	13	3	3848	3.6	60
M-12B	1700	336	27	13	3	2516	2.3	60
Total-12	4300					6364	5.9	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-13A	2700	120	12	13	3	3996	3.7	60
M-13B	600	140	14	13	3	888	0.8	60
M-13C	700	158	15	13	3	1036	1.0	60
Total-13	4000					5920	5.5	
M-14A	3000	108	10	13	3	4440	4.1	60
M-14B	800	124	13	13	3	1184	1.1	60
Total-14	3800					5624	5.2	
M-15A	2600	100	10	13	3	3848	3.6	60
L-1A	1200	80	8	13	3	1776	1.7	60
L-1B	3000	170	15	13	3	4440	4.1	60
M-15B	1400	298	24	13	3	2072	1.9	60
M-15C	1000	338	27	13	3	1480	1.4	60
Total-15	9200					13,616	12.7	
M-16A	1300	39	5	13	3	1924	1.8	60
M-16B	1000	59	6	13	3	1480	1.4	60
Total-16	2300					3404	3.2	
M-17A	1300	80	8	13	3	1924	1.8	60
M-17B	700	98	10	13	3	1036	1.0	60
Total-17	2000					2960	2.8	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-18A	4300	280	23	13	3	6364	5.9	60
M-18B	2000	416	33	13	3	2960	2.8	60
M-18C	1000	456	34	13	3	1480	1.4	60
Total-18	7300					10,804	10.1	
M-19A	2600	132	13	13	3	3848	3.6	60
M-19B	1100	156	15	13	3	1628	1.6	60
Total-19	3700					5476	5.2	
M-20A	300	52	6	13	3	444	0.5	60
M-20B	4300	412	31	13	3	6364	5.9	60
M-20C	2500	532	41	13	3	3700	3.4	60
Total-20	7100					10,508	9.8	
M-21A	4000	148	14	13	3	5920	5.5	60
L-1A	2600	324	27	13	3	3848	3.6	60
L-1B	2500	458	35	13	3	3700	3.4	60
M-21B	2700	778	52	14	4	4509	4.0	65
Total-21	11,800					17,977	16.5	
M-22A	700	208	18	13	3	1036	1.0	60
M-22B	1000	252	21	13	3	1480	1.4	60
M-22C	3800	524	41	13	3	5624	5.2	60
M-22D	1300	556	42	13	3	1924	1.8	60
Total-22	6800					10,064	9.4	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-23A	2100	430	35	13	3	3106	2.9	60
M-23B	2100	630	42	13	3	3106	2.9	60
M-23C	2000	750	50	14	4	3340	3.1	65
M-23D	2000	890	59	15	5	3700	3.1	68
L-1A	1500	80	8	13	3	2220	2.1	60
L-1B	4200	320	25	13	3	6216	5.8	60
M-23E	800	1398	85	17	7	1776	1.3	74
M-23F	4100	1746	100	19	9	10,619	7.5	80
M-23G	1000	1764	100	19	9	2590	1.8	80
L-2A	5600	416	31	13	3	8288	7.7	60
M-23H	1300	2220	125	22	12	4095	2.6	89
Total-23	26,700					49,056	40.8	
M-24A	1900	200	18	13	3	2812	2.6	60
L-1A	3700	152	15	13	3	5476	5.1	60
M-24B	1200	400	30	13	3	1776	1.7	60
L-2A	3000	124	12	13	3	4440	4.1	60
M-24C	2800	864	61	16	6	5712	4.4	70
M-24D	2400	936	62	16	6	4896	3.9	70
Total-24	15,000					25,112	21.8	
M-25A	3600	356	28	13	3	5328	5.0	60
M-25B	1100	436	34	13	3	1628	1.6	60
M-25C	1200	496	38	13	3	1776	1.7	60
Total-25	5900					8732	8.3	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-26A	3000	200	18	13	3	4440	4.1	60
M-26B	900	272	22	13	3	1332	1.2	60
L-1A	1400	68	7	13	3	2072	1.9	60
L-1B	2500	128	12	13	3	3700	3.5	60
M-26C	5700	868	59	15	5	10,545	8.9	68
M-26D	3400	1028	69	14	4	5678	5.0	65
M-26E	1200	1076	70	14	4	2004	1.8	65
L-2A	4100	184	18	13	3	6068	5.6	60
L-2B	1000	200	22	13	3	1480	1.4	60
M-26F	1000	1304	90	16	6	2040	1.6	70
M-26G	2800	2018	Present canal with proper maintenance will be adequate					
M-26H	3800	2707	Present canal with proper maintenance will be adequate					
Total-26	30,800					39,359	35.0	
M-27A	1900	108	10	13	3	2812	2.6	60
M-27B	600	122	11	13	3	888	0.8	60
Total-27	2500					3700	3.4	
M-28A	4300	304	24	13	3	6364	5.9	60
L-1A	1000	64	6	13	3	1480	1.4	60
L-1B	700	92	9	13	3	1036	1.0	60
L-1C	3800	324	26	13	3	5624	5.2	60
M-28B	1200	848	50	14	4	2004	1.8	65
M-28C	4000	1212	Present canal with proper maintenance will be adequate					
L-2A	3600	100	10	13	3	5328	5.0	60
L-3A	1900	72	7	13	3	2812	2.6	60
L-2B	500	208	14	13	3	740	0.7	60

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-2C	1400	256	18	13	3	2072	1.9	60
M-28D	1700	1558	Present canal with proper maintenance will be adequate					
M-28E	1300	1646	Present canal with proper maintenance will be adequate					
Total-28	25,400					27,460	25.5	
M-29A	1700	84	9	13	3	2516	2.3	60
Total-29	1700					2516	2.3	
M-30A	5000	196	16	13	3	7400	6.9	60
Total-30	5000					7400	6.9	
M-31A	4000	368	22	13	3	5920	5.5	60
M-31B	2000	504	30	13	3	2960	2.8	60
L-1A	3300	324	28	13	3	4884	4.5	60
L-1B	3300	464	42	13	3	4884	4.5	60
L-2A	3000	340	28	13	3	4440	4.1	60
L-2B	1300	390	29	13	3	1924	1.8	60
L-1C	7300	1434	90	16	6	14,892	11.7	70
L-1D	3600	1614	100	16	6	7344	5.8	70
M-31C	1200	2190	120	17	7	2664	2.0	74
Total-31	29,000					49,912	42.7	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-32A	1500	68	6	13	3	2220	2.1	60
M-32B	1300	108	10	13	3	1924	1.8	60
Total-32	2800					4144	3.9	
M-33A	3100	280	23	13	3	4588	4.3	60
L-1A	3300	104	10	13	3	4884	4.5	60
L-1B	500	116	10	13	3	740	0.7	60
L-1C	1200	146	13	13	3	1776	1.7	60
M-33B	1800	520	39	13	3	2664	2.5	60
M-33C	1800	596	42	13	3	2664	2.5	60
M-33D	1200	656	46	14	4	2004	1.8	65
Total-33	12,900					19,320	18.0	
M-34A	2200	116	10	13	3	3256	3.0	60
Total-34	2200					3256	3.0	
M-35A	4600	336	26	13	3	6803	6.3	60
Total-35	4600					6803	6.3	
M-36A	800	136	12	13	3	1184	1.1	60
M-36B	4500	420	31	13	3	6660	6.2	60
Total-36	5300					7844	7.3	

ENGINEERING AND DESIGN DATA

Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-37A	9200	588	40	13	3	13,616	12.7	60
L-1A	5900	280	23	13	3	8732	8.1	60
M-37B	800	888	64	14	4	1336	1.2	65
Total-37	15,900					23,684	22.0	
M-38A	3800	380	28	13	3	5624	5.2	60
M-38B	4000	650	46	14	4	6680	5.5	60
M-38C	3200	862	59	15	5	5920	5.0	68
M-38D	3900	1132	72	16	6	7956	6.2	70
M-38E	1500	1168	74	16	6	3060	2.4	70
Total-38	16,400					29,240	24.3	
M-39A	1300	64	7	13	3	1924	1.8	60
M-39B	1900	132	12	13	3	2812	2.6	60
Total-39	3200					4736	4.4	
M-40A	2000	328	26	13	3	2960	2.8	60
M-49B	700	348	28	13	3	1036	1.0	60
L-1A	2900	114	10	13	3	4292	4.0	60
M-40C	1300	514	38	13	3	1924	1.8	60
Total-40	6900					10,212	9.6	
M-41A	2200	144	12	13	3	3256	3.0	60
M-41B	4000	400	31	13	3	5920	5.5	60
M-41C	2900	544	Present canal with proper maintenance will be adequate					
Total-41	9100					9176	8.5	

ENGINEERING AND DESIGN DATA
Area 4 - Claussen - Evergreen - Willow Creek

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-42A	3300	410	31	13	3	4884	4.5	60
M-42B	5100	784	54	15	5	9435	7.9	68
Total-42	8400					14,319	12.4	
M-43A	8700	594	42	13	3	12,876	12.0	60
M-43B	3000	794	55	15	5	5550	4.7	60
L-1A	2900	278	23	13	3	4292	4.0	60
L-1B	3500	408	31	13	3	5180	4.8	60
L-1C	2600	480	38	13	3	3848	3.6	60
M-43C	2200	1378	88	16	6	4488	3.5	70
Total-43	22,900					36,234	32.6	
M-44A	1600	220	18	13	3	2368	2.2	60
M-44B	4500	540	42	13	3	6660	6.2	60
M-44C	1400	608	Present canal with proper maintenance will be adequate					
Total-44	7500					9028	8.4	
M-45A	3000	75	7	13	3	4440	4.1	60
Total-45	3000					4440	4.1	
Area-4 Grand Total	437,600					613,123	548.7	

ENGINEERING AND DESIGN DATA

Area 5 - Olanta - Lake City - Scranton - Byrds Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-1A	700	30	4	13	3	1036	1.0	60
M-1B	6000	410	29	13	3	8880	8.3	60
Total-1	6700					9916	9.3	
M-2A	7500	976	64	16	6	15,300	12.0	70
M-2B	3300	1230	121	22	12	10,395	6.7	89
M-2C	1400	1342	148	24	14	4928	3.0	95
M-2D	7900	2274	197	30	20	36,577	20.8	115
M-2E	5300	2866	224	32	22	26,500	16.0	132
M-2F	5000	3286	244	34	24	26,850	15.8	138
Total-2	30,400					120,550	74.3	
M-3A	1200	800	55	15	5	2220	1.8	68
M-3B	3400	972	64	16	6	6936	5.4	70
M-3C	1700	1014	67	16	6	3468	2.7	70
M-3D	800	1070	71	16	6	1632	1.3	70
M-3E	3600	1226	77	17	7	7992	6.1	74
Total-3	10,700					22,248	17.3	
M-4A	3100	250	24	13	3	4588	4.3	60
M-4B	3500	574	41	13	3	5180	4.8	60
M-4C	5200	1092	70	16	6	10,608	8.3	70
M-4D	5600	1672	101	19	9	14,504	10.2	80
L-1A	5200	392	31	13	3	7696	7.2	60
L-1B	1200	412	38	13	3	1776	1.7	60
M-4E	900	2180	126	22	12	2835	1.8	89

ENGINEERING AND DESIGN DATA

Area 5 - Olanta - Lake City - Scranton - Byrds Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-4F	1900	2288	130	22	12	5985	3.8	89
M-4G	4900	2660	150	24	14	17,248	10.6	95
L-2A	3400	172	15	13	3	5032	4.7	60
L-2B	5800	608	43	13	3	8584	8.0	60
L-2C	3000	668	46	14	4	5010	4.4	65
M-4H	100	3328	178	28	18	426	0.2	108
M-4I		Detailed survey required to determine extent of outlet needed into adjacent county.						
Total-4	43,800					89,472	70.0	
M-5A	4000	372	29	13	3	5920	5.5	60
M-5B	7000	772	53	15	5	12,950	10.9	68
M-5C	4600	1232	77	17	7	10,212	7.8	74
Total-5	15,600					29,082	24.2	
M-6A	6600	424	32	13	3	9768	9.1	60
Total-6	6600					9768	9.1	
M-7A	2300	264	26	13	3	3404	3.2	60
M-7B	2300	476	36	13	3	3404	3.2	60
M-7C	4300	656	46	14	4	7181	6.4	65
M-7D	4900	976	64	16	6	9996	7.8	70
M-7E	4200	1196	76	16	6	8568	6.7	70
M-7F	6100	1708	102	19	9	15,799	11.2	80
M-7G	900	1728	103	19	9	2331	1.6	80
L-1A	1000	33	4	13	3	1480	1.4	60
L-1B	2100	129	12	13	3	3108	2.9	60
L-1C	6900	381	31	13	3	10,212	9.5	60

ENGINEERING AND DESIGN DATA

Area 5 - Olanta - Lake City - Scranton - Byrds Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-7H	800	2149	124	22	12	2520	1.6	89
M-7I	2900	2485	139	24	14	10,208	6.3	95
M-7J	1200	2557	143	24	14	4224	2.6	95
L-2A	1600	100	10	13	3	2368	2.2	60
L-2B	4500	252	21	13	3	6660	6.2	60
L-2C	3300	404	31	13	3	4884	4.5	60
L-2D	900	448	34	13	3	1332	1.2	60
M-7K	1000	3057	167	26	16	3890	2.3	102
M-7L	3300	3373	187	28	18	14,058	8.1	108
Total-7	54,500					115,627	88.9	
M-8A	4200	472	36	13	3	6216	5.8	60
M-8B	2400	636	45	14	4	4008	3.5	65
M-8C	2100	732	51	14	4	3507	3.1	65
M-8D	2000	904	60	16	6	4080	3.2	70
M-8E	5300	1296	82	17	7	11,766	9.0	74
M-8F	900	1320	84	17	7	1998	1.5	74
Total-8	16,900					31,575	26.1	
M-9A	1800	164	16	13	3	2664	2.5	60
M-9B	4500	640	45	14	4	7515	6.7	65
M-9C	2800	1030	68	16	6	5712	4.4	70
M-9D	2600	1420	89	18	8	6266	4.5	77
M-9E	4000	2072	122	22	12	12,600	8.1	89
Total-9	15,700					34,757	26.2	

ENGINEERING AND DESIGN DATA

Area 5 - Olanta - Lake City - Scranton - Byrds Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-10A	5100	456	35	13	3	7548	7.0	60
M-10B	4000	886	60	16	6	8160	5.5	70
M-10C	2000	1004	66	16	6	4080	2.8	70
M-10D	1900	1124	74	16	6	3876	2.6	70
M-10E	1600	1316	83	17	7	3552	2.2	74
M-10F	4900	1836	110	20	10	13,622	6.7	83
M-10G	1800	2152	125	22	12	5670	2.5	89
M-10H	6500	2672	151	24	14	22,880	14.2	95
Total-10	27,800					69,388	43.5	
M-11A	1000	196	17	13	3	1480	1.4	60
M-11B	8200	944	62	16	6	16,728	13.2	70
M-11C	3700	1236	79	17	7	8214	5.1	74
M-11D	3100	1688	103	19	9	8029	4.3	80
M-11E	5000	2400	135	24	14	17,600	6.9	95
L-1A	5200	488	36	13	3	7696	7.2	60
M-11F	2800	2648	149	24	14	9856	3.9	95
L-2A	4000	420	32	13	3	5920	5.5	60
L-2B	1600	460	35	13	3	2368	2.2	60
M-11G	3400	2968	162	26	16	13,226	4.7	102
M-11H	2700	3088	169	26	16	10,503	3.7	102
L-3A	3800	320	26	13	3	5624	5.2	60
L-3B	4300	672	47	14	4	7181	5.9	65
L-3C	2700	788	54	15	5	4995	3.7	68
M-11I	1100	3248	173	26	16	4279	1.6	102
M-11J	6000	3560	189	28	18	25,560	14.9	108
Total-11	58,600					149,259	89.4	

ENGINEERING AND DESIGN DATA
Area 5 - Olanta - Lake City - Scranton - Byrds Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-12A	3800	316	26	13	3	5624	5.2	60
M-12B	5300	764	53	15	5	9805	7.3	68
M-12C	4500	1384	87	18	8	10,845	6.2	77
Total-12	13,600					26,274	18.7	
M-13A	4800	312	26	13	3	7104	6.6	60
M-13B	4400	764	53	15	5	8140	6.1	68
M-13C	3200	1008	67	16	6	6528	4.4	70
M-13D	3500	1132	73	16	6	7140	4.8	70
Total-13	15,900					28,912	21.9	
M-14A	4000	476	36	13	3	5920	5.5	60
M-14B	3100	788	55	15	5	5735	4.3	68
M-14C	5000	1004	66	16	6	10,200	6.9	70
M-14D	2200	1132	73	16	6	4488	3.0	70
Total-14	14,300					26,343	19.7	
M-15A		780	Present canal with proper maintenance will be adequate					
M-15B		896	Present canal with proper maintenance will be adequate					
M-15C		1216	Present canal with proper maintenance will be adequate					
M-15D		1420	Present canal with proper maintenance will be adequate					
Total-15								

ENGINEERING AND DESIGN DATA

Area 5 - Olanta - Lake City - Scranton - Byrds Crossroads

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-16A		120	Present canal with proper maintenance will be adequate					
M-16B		396	Present canal with proper maintenance will be adequate					
M-16C		424	Present canal with proper maintenance will be adequate					
L-1A		1112	Present canal with proper maintenance will be adequate					
L-1B		1164	Present canal with proper maintenance will be adequate					
M-16D		1400	Present canal with proper maintenance will be adequate					
Total-16								
M-17A		492	Present canal with proper maintenance will be adequate					
M-17B		996	Present canal with proper maintenance will be adequate					
M-17C		1456	Present canal with proper maintenance will be adequate					
M-17D		1832	Present canal with proper maintenance will be adequate					
Total-17								
M-18A		372	Present canal with proper maintenance will be adequate					
M-18B		708	Present canal with proper maintenance will be adequate					
M-18C		1004	Present canal with proper maintenance will be adequate					
M-18D		1494	Present canal with proper maintenance will be adequate					
Total-18								
M-19	67,320	8880	Lynches Lake - Camp Branch Watershed Canal (See Planning Area 5 text)					
Total-19	67,320							
Area 5 Grand Total	398,420					763,171	538.6	

ENGINEERING AND DESIGN DATA

Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-1A	2000	96	Present canal with proper maintenance will be adequate					
M-1B	2100	136	Present canal with proper maintenance will be adequate					
L-1A	5900	360	Present canal with proper maintenance will be adequate					
L-2A	1500	536	Present canal with proper maintenance will be adequate					
M-1C	1300	708	Present canal with proper maintenance will be adequate					
Total-1	12,800							
M-2A	4100	314	Present canal with proper maintenance will be adequate					
M-2B	1500	360	Present canal with proper maintenance will be adequate					
M-2C	2600	560	Present canal with proper maintenance will be adequate					
Total-2	8200							
M-3A	3300	236	20	13	3	4884	4.5	60
M-3B	1300	356	25	13	3	1924	1.8	60
M-3C	2100	436	36	13	3	3108	2.9	60
M-3D	1700	492	38	13	3	2510	2.3	60
Total-3	8400					12,426	11.5	
M-4A	700	260	35	13	3	1036	1.0	60
M-4B	4000	501	45	14	4	6680	6.0	65
M-4C	5900	1381	145	24	14	20,768	12.8	95
M-4D	3900	1493	170	26	16	15,171	9.1	102
L-3A	4900	373	18	13	3	7252	6.7	60
M-4E	1400	1918	190	28	18	5964	6.4	108
L-2A	2100	228	12	13	3	3108	2.9	60
L-2B	3300	453	31	13	3	5180	4.8	60
L-2C	3300	673	52	14	4	6680	4.9	65

ENGINEERING AND DESIGN DATA
Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-2D	3300	833	68	16	6	6732	5.3	70
M-4F	4000	2968	210	30	20	18,983	10.5	115
M-4G	2000	3448	218	32	20	10,649	5.3	115
L-1A	2300	220	15	13	3	3404	3.1	60
L-1B	2600	340	22	13	3	3848	3.6	60
L-1C	1000	370	28	13	3	1480	1.4	60
M-4H	1300	3866	255	34	24.	6981	4.1	138
M-4I	1400	3898	258	36	26	8036	4.7	146
Total-4	47,400					131,952	92.6	
M-5A	700	274	26	13	3	1036	1.0	60
M-5B	3800	514	42	13	3	5624	5.2	60
M-5C	1800	574	43	13	3	2664	2.5	60
Total-5	6300					9324	8.7	
M-6A	300	24	3	13	3	444	0.5	60
M-6B	4600	360	28	13	3	6808	6.3	60
M-6C	1000	524	Present canal with proper maintenance will be adequate					
M-6D	1600	772	Present canal with proper maintenance will be adequate					
L-2A	1300	148	13	13	3	1924	1.8	60
L-2B	2800	364	29	13	3	4144	3.9	60
L-2C	500	372	30	13	3	740	0.7	60
M-6E	600	1164	Present canal with proper maintenance will be adequate					
L-3A	1300	360	28	13	3	1924	1.8	60
L-3B	3000	524	39	13	3	4440	4.1	60
L-3C	1300	572	41	13	3	1924	1.8	60
L-3D	2000	636	Present canal with proper maintenance will be adequate					
M-6F	1600	1868	Present canal with proper maintenance will be adequate					

ENGINEERING AND DESIGN DATA

Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-1A	7700	1500	95	18	8	18,557	13.6	77
L-1B	5000	1812	Present canal with proper maintenance will be adequate					
L-1C	1600	2070	Present canal with proper maintenance will be adequate					
L-1D	1400	2168	Present canal with proper maintenance will be adequate					
L-1E	1500	2220	Present canal with proper maintenance will be adequate					
M-6G	700	4156	Present canal with proper maintenance will be adequate					
M-6H	1500	4276	Present canal with proper maintenance will be adequate					
Total-6	41,300					40,905	34.5	
M-7A	3600	296	Present canal with proper maintenance will be adequate					
M-7B	4600	624	Present canal with proper maintenance will be adequate					
M-7C	4000	932	Present canal with proper maintenance will be adequate					
M-7D	1000	976	Present canal with proper maintenance will be adequate					
M-7E	700	1008	Present canal with proper maintenance will be adequate					
M-7F	1000	1036	Present canal with proper maintenance will be adequate					
L-2A	5900	1388	Present canal with proper maintenance will be adequate					
L-2B	500	1412	Present canal with proper maintenance will be adequate					
L-2C	4000	1692	Present canal with proper maintenance will be adequate					
L-2D	1500	1964	Present canal with proper maintenance will be adequate					
L-2E	3300	1874	Present canal with proper maintenance will be adequate					
L-2F	8600	2720	Present canal with proper maintenance will be adequate					
M-7G	2500	1268	Present canal with proper maintenance will be adequate					
M-7H	3600	1644	Present canal with proper maintenance will be adequate					
L-1A	3800	308	Present canal with proper maintenance will be adequate					
L-1B	4000	528	Present canal with proper maintenance will be adequate					
M-7I	3200	1944	Present canal with proper maintenance will be adequate					
M-7J	1300	2224	Present canal with proper maintenance will be adequate					
L-3A	9900	756	Present canal with proper maintenance will be adequate					

ENGINEERING AND DESIGN DATA

Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-3B	2800	868	Present canal with proper maintenance will be adequate					
L-3C	1800	932	Present canal with proper maintenance will be adequate					
L-3D	1300	964	Present canal with proper maintenance will be adequate					
M-7K	3300	3476	Present canal with proper maintenance will be adequate					
Total-7	76,200							
M-8A	3400	184	16	13	3	5032	4.7	60
M-8B	3300	324	27	13	3	4884	4.5	60
M-8C	5200	748	52	14	4	8684	7.7	65
M-8D	7100	1116	70	16	6	14,484	11.4	70
M-8E	2600	1184	72	16	6	5304	4.1	70
L-1A	2500	360	28	13	3	3700	3.4	60
L-1B	2100	536	40	13	3	3108	2.9	60
L-1C	1800	592	42	13	3	2664	2.5	60
L-1D	1300	644	43	13	3	1924	1.8	60
M-8F	700	1884	110	20	10	1946	1.3	83
L-2A	3300	152	12	13	3	4884	4.5	60
M-8G	2000	2208	125	22	12	6300	4.0	89
M-8H	1600	2252	127	22	12	5040	3.2	89
Total-8	36,900					67,954	56.0	
M-9A	600	140	12	13	3	888	0.8	60
M-9B	4100	528	39	13	3	6068	5.6	60
M-9C	4600	868	55	15	5	8510	7.2	68
M-9D	2600	988	65	16	6	5304	4.1	70
L-1A	2000	136	13	13	3	2960	2.8	60
L-1B	2600	236	18	13	3	3848	3.6	60

ENGINEERING AND DESIGN DATA
Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-9E	1000	1336	80	17	7	2220	1.7	74
M-9F	5900	1620	100	19	9	15,281	10.8	80
Total-9	23,400					45,079	36.6	
M-10A	2200	64	Present canal with proper maintenance will be adequate					
L-2A	1300	130	Present canal with proper maintenance will be adequate					
L-2B	600	154	Present canal with proper maintenance will be adequate					
L-2C	4400	490	Present canal with proper maintenance will be adequate					
L-2D	3900	850	Present canal with proper maintenance will be adequate					
L-2E	2000	998	Present canal with proper maintenance will be adequate					
L-2F	3000	1934	Present canal with proper maintenance will be adequate					
M-10B	2600	2970	Present canal with proper maintenance will be adequate					
L-1A	2700	170	Present canal with proper maintenance will be adequate					
M-10C	4900	3972	Present canal with proper maintenance will be adequate					
M-10D	2000	4092	Present canal with proper maintenance will be adequate					
M-10E	1300	4124	Present canal with proper maintenance will be adequate					
Total-10	30,900							
M-11A	4100	240	20	13	3	6068	5.6	60
M-11B	3000	328	26	13	3	4440	4.1	60
M-11C	2600	420	33	13	3	3848	3.6	60
L-1A	1700	272	23	13	3	2516	2.3	60
L-1B	2800	348	28	13	3	4144	3.8	60
L-2A	3300	272	22	13	3	4884	4.5	60
L-1C	2300	676	46	14	4	3841	3.4	65
L-1D	1000	696	48	14	4	1670	1.5	65
M-11D	2600	1344	Present canal with proper maintenance will be adequate					
M-11E	3000	1432	Present canal with proper maintenance will be adequate					
L-3A	2300	176	15	13	3	3404	3.2	60

ENGINEERING AND DESIGN DATA

Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-3B	2100	284	24	13	3	3108	2.9	60
L-9A	2800	112	Present canal with proper maintenance will be adequate					
L-3C	5900	864	52	14	4	9853	8.8	65
L-3D	3000	964	58	15	5	5550	4.7	68
L-3E	1000	1012	59	15	5	1850	1.6	68
L-3F	4600	1156	67	16	6	9384	7.4	70
M-11F	3600	2844	Present canal with proper maintenance will be adequate					
L-4A	1800	128	11	13	3	2664	2.5	60
L-4B	700	140	14	13	3	1036	1.0	60
L-5A	1300	164	15	13	3	1924	1.8	60
L-5B	4900	524	39	13	3	7252	6.7	60
L-5C	1000	568	40	13	3	1036	1.4	60
L-5D	2300	608	43	13	3	3404	3.2	60
L-4C	5900	1900	105	19	9	15,281	10.8	80
L-4D	2800	1964	105	19	9	7252	5.1	80
M-11G	2700	5008	Present canal with proper maintenance will be adequate					
L-6A	1300	68	11	13	3	1924	1.8	60
L-6B	1800	128	33	13	3	2664	2.5	60
L-6C	6100	424	35	13	3	9028	8.4	60
L-7A	5300	276	15	13	3	7844	7.3	60
L-7B	1500	320	26	13	3	2220	2.1	60
L-7C	3800	480	35	13	3	5624	5.2	60
L-6D	2300	976	65	16	6	4692	11.7	70
L-6E	4300	1272	70	16	6	8772	6.9	70
L-6F	700	1332	80	17	7	1554	1.7	74
L-6G	3300	1436	Present canal with proper maintenance will be adequate					
M-11H	4600	6844	Present canal with proper maintenance will be adequate					
M-11I	3000	6936	Present canal with proper maintenance will be adequate					
L-8A	7900	320	Present canal with proper maintenance will be adequate					

ENGINEERING AND DESIGN DATA

Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-11J	2800	7416	Present canal with proper maintenance will be adequate					
M-11K	1500	7484	Present canal with proper maintenance will be adequate					
M-11L	2500	7540	Present canal with proper maintenance will be adequate					
Total-11	129,900					148,731	137.0	
M-12A	1300	160	15	13	3	1924	1.8	60
M-12B	2300	230	18	13	3	3408	3.1	60
Total-12	3600					5332	4.9	
M-13A	1700	104	10	13	3	2516	2.3	60
M-13B	1900	172	15	13	3	2812	2.6	60
Total-13	3600					5328	4.9	
M-14A	2000	288	13	13	3	2960	2.8	60
M-14B	3600	552	24	13	3	5328	5.0	60
L-2A	2600	488	40	13	3	3848	3.6	60
M-14C	1000	1096	65	16	6	2040	1.6	70
M-14D	1600	1192	70	16	6	3264	2.6	70
L-1A	700	72	7	13	3	1036	1.0	60
L-1B	4600	488	35	13	3	6808	6.3	60
M-14E	1000	1760	103	19	9	2590	1.8	80
M-14F	1000	1804	105	19	9	2590	1.8	80
Total-14	18,100					30,464	26.5	

ENGINEERING AND DESIGN DATA

Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-15A	2300	244	Present canal with proper maintenance will be adequate					
M-15B	4300	636	Present canal with proper maintenance will be adequate					
M-15C	3700	808	Present canal with proper maintenance will be adequate					
L-2A	3600	336	Present canal with proper maintenance will be adequate					
L-2B	2800	476	Present canal with proper maintenance will be adequate					
L-2C	1000	512	Present canal with proper maintenance will be adequate					
M-15D	2000	1388	Present canal with proper maintenance will be adequate					
L-1A	2600	176	Present canal with proper maintenance will be adequate					
L-1B	2100	272	Present canal with proper maintenance will be adequate					
M-15E	6300	2080	Present canal with proper maintenance will be adequate					
Total-15	30,700							
M-16A	4000	208	18	13	3	5920	5.5	60
L-3A	2300	212	18	13	3	3404	3.1	60
L-3B	2600	372	30	13	3	3848	3.6	60
M-16B	1300	636	Present canal with proper maintenance will be adequate					
L-2A	2000	132	13	13	3	2960	2.8	60
L-2B	800	148	14	13	3	1184	1.1	60
M-16C	3000	936	Present canal with proper maintenance will be adequate					
L-1A	800	72	7	13	3	1184	3.0	60
L-1B	3800	174	14	13	3	5624	5.2	60
M-16D	1300	1164	Present canal with proper maintenance will be adequate					
M-16E	2300	1220	Present canal with proper maintenance will be adequate					
Total-16	24,200					24,124	24.3	

ENGINEERING AND DESIGN DATA
Area 6 - Friendfield - Coward - Highhill - Camerontown

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-17A	3600	320	25	13	3	5328	5.0	60
M-17B	3300	528	40	13	3	4884	4.5	60
L-1A	700	56	6	13	3	1036	1.0	60
L-1B	2800	156	15	13	3	4144	3.9	60
M-17C	2000	892	59	15	5	3700	3.1	68
M-17D	6900	1272	85	17	7	15,318	11.7	74
Total-17	19,300					34,410	29.2	
M-18A	700	64	10	13	3	1036	1.0	60
M-18B	5300	440	36	13	3	7844	7.3	60
L-1A	5300	368	35	13	3	7844	7.3	60
M-18C	2000	1048	70	16	6	4080	3.2	70
M-18D	3000	1358	89	18	8	7230	5.3	77
M-18E	700	1394	90	18	8	1687	1.2	77
Total-18	17,000					29,721	25.3	
M-19A	4000	296	23	13	3	5920	2.9	60
M-19B	1500	338	27	13	3	2220	1.1	60
Total-19	5500					8140	4.0	
Area 6 Grand Total	543,700					593,890	496.0	

ENGINEERING AND DESIGN DATA
Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-1A	3000	536	40	13	3	4440	4.1	60
L-2A	2000	636	10	13	3	2960	2.8	60
M-1B	2000	836	55	15	5	3700	3.1	68
L-1A	5200	868	57	15	5	9620	8.1	68
L-1B	4300	1084	70	20	10	11,954	8.1	83
M-1C	4300	2608	150	24	14	15,136	9.4	95
Total-1	20,800					47,810	35.6	
M-2A	5000	888	56	15	5	9250	7.8	68
M-2B	4100	1100	Present canal with proper maintenance will be adequate					
Total-2	9100					9250	7.8	
M-3A	2000	456	Present canal with proper maintenance will be adequate					
M-3B	600	545	Present canal with proper maintenance will be adequate					
M-3C	2000	753	Present canal with proper maintenance will be adequate					
M-3D	2300	861	Present canal with proper maintenance will be adequate					
Total-3	6900							
M-4A	2600	162	15	13	3	3848	3.6	60
L-1A	4000	184	16	13	3	5920	5.5	60
M-4B	700	410	30	13	3	1036	1.0	60
L-2A	2500	44	4	13	3	3700	3.3	60
M-4C	3000	558	40	13	3	4440	4.1	60
Total-4	12,800					18,944	17.5	

ENGINEERING AND DESIGN DATA

Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-5A	1900	152	14	13	3	2812	2.6	60
M-5B	1600	236	20	13	3	2368	2.2	60
Total-5	3500					5180	4.8	
M-6A	1300	62	7	13	3	1924	1.8	60
M-6B	800	88	9	13	3	1184	1.1	60
Total-6	2100					3108	2.9	
M-7A	4800	692	49	14	4	8016	7.1	65
M-7B	5600	1064	71	16	6	11,424	9.0	70
M-7C	1700	1240	80	17	7	3774	2.9	74
M-7D	2600	1556	95	18	8	6266	4.6	77
M-7E	1500	1660	100	22	12	4725	7.1	89
M-7F	1900	1900	130	22	12	5985	3.9	89
M-7G	1600	2052	140	24	14	5280	7.0	95
M-7H	3100	2292	143	24	14	10,912	1.8	95
M-7I	700	2316	145	24	14	2464	1.5	95
Total-7	23,500					58,846	44.9	
M-8A	3300	168	15	13	3	4884	4.5	60
L-1A	2600	120	12	13	3	3848	3.6	60
M-8B	800	392	30	13	3	1184	1.8	60
M-8C	7000	1512	90	18	8	16,870	12.3	77
M-8D	3600	1840	110	20	10	10,008	6.8	83
M-8E	1100	1880	120	22	12	3465	2.2	89

ENGINEERING AND DESIGN DATA
Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-2A	5300	468	Present canal with proper maintenance will be adequate					
M-8F	3300	2820	Present canal with proper maintenance will be adequate					
M-8G	4000	3104	Present canal with proper maintenance will be adequate					
M-8H	1900	3180	Present canal with proper maintenance will be adequate					
Total-8	32,900					40,259	31.2	
M-9A	4000	260	22	13	3	5920	5.5	60
Total-9	4000					5920	5.5	
M-10A	2800	248	20	13	3	4144	3.9	60
M-10B	500	260	21	13	3	740	0.7	60
Total-10	3300					4884	4.6	
M-11A	5000	580	43	13	3	7400	6.9	60
M-11B		756	Present canal with proper maintenance will be adequate					
M-11C		1308	Present canal with proper maintenance will be adequate					
M-11D		2008	Present canal with proper maintenance will be adequate					
Total-11	5000					7400	6.9	
M-12A	3600	325	25	13	3	5328	5.0	60
M-12B	1500	353	28	13	3	2220	2.1	60
Total-12	5100					7548	7.1	

ENGINEERING AND DESIGN DATA

Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-5A	1900	152	14	13	3	2812	2.6	60
M-5B	1600	236	20	13	3	2368	2.2	60
Total-5	3500					5180	4.8	
M-6A	1300	62	7	13	3	1924	1.8	60
M-6B	800	88	9	13	3	1184	1.1	60
Total-6	2100					3108	2.9	
M-7A	4800	692	49	14	4	8016	7.1	65
M-7B	5600	1064	71	16	6	11,424	9.0	70
M-7C	1700	1240	80	17	7	3774	2.9	74
M-7D	2600	1556	95	18	8	6266	4.6	77
M-7E	1500	1660	100	22	12	4725	7.1	89
M-7F	1900	1900	130	22	12	5985	3.9	89
M-7G	1600	2052	140	24	14	5280	7.0	95
M-7H	3100	2292	143	24	14	10,912	1.8	95
M-7I	700	2316	145	24	14	2464	1.5	95
Total-7	23,500					58,846	44.9	
M-8A	3300	168	15	13	3	4884	4.5	60
L-1A	2600	120	12	13	3	3848	3.6	60
M-8B	800	392	30	13	3	1184	1.8	60
M-8C	7000	1512	90	18	8	16,870	12.3	77
M-8D	3600	1840	110	20	10	10,008	6.8	83
M-8E	1100	1880	120	22	12	3465	2.2	89

ENGINEERING AND DESIGN DATA
Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
L-2A	5300	468	Present canal with proper maintenance will be adequate					
M-8F	3300	2820	Present canal with proper maintenance will be adequate					
M-8G	4000	3104	Present canal with proper maintenance will be adequate					
M-8H	1900	3180	Present canal with proper maintenance will be adequate					
Total-8	32,900					40,259	31.2	
M-9A	4000	260	22	13	3	5920	5.5	60
Total-9	4000					5920	5.5	
M-10A	2800	248	20	13	3	4144	3.9	60
M-10B	500	260	21	13	3	740	0.7	60
Total-10	3300					4884	4.6	
M-11A	5000	580	43	13	3	7400	6.9	60
M-11B		756	Present canal with proper maintenance will be adequate					
M-11C		1308	Present canal with proper maintenance will be adequate					
M-11D		2008	Present canal with proper maintenance will be adequate					
Total-11	5000					7400	6.9	
M-12A	3600	325	25	13	3	5328	5.0	60
M-12B	1500	353	28	13	3	2220	2.1	60
Total-12	5100					7548	7.1	

ENGINEERING AND DESIGN DATA
Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-13A	1600	124	12	13	3	2368	2.2	60
M-13B	1700	184	17	13	3	2516	2.3	60
Total-13	3300					4884	4.5	
M-14A	3000	244	20	13	3	4440	4.1	60
M-14B	600	314	25	13	3	888	0.8	60
M-14C	3100	550	40	13	3	4588	4.3	60
L-1A	3900	296	24	13	3	5772	5.4	60
M-14D	2000	1114	70	16	6	4080	3.2	70
M-14E	1900	1354	83	17	7	4218	3.2	74
Total-14	14,500					23,986	21.0	
M-15A	9900	848	59	15	5	19,246	15.4	68
L-1A	4500	380	30	13	3	6660	6.2	60
M-15B	700	1274	76	16	6	1428	1.1	70
M-15C		1370	Present canal with proper maintenance will be adequate					
Total-15	15,100					27,334	22.7	
M-16A	3200	208	17	13	3	2960	4.4	60
M-16B	1300	256	Present canal with proper maintenance will be adequate					
Total-16	4500					2960	4.4	
M-17A	5300	572	40	13	3	7844	7.3	60
M-17B	600	596	41	13	3	888	0.8	60
Total-17	5900					8732	8.1	

ENGINEERING AND DESIGN DATA
Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-18A	1800	96	9	13	3	2664	2.5	60
M-18B	3300	204	18	13	3	4884	4.5	60
M-18C	1300	244	20	13	3	1924	1.8	60
Total-18	6400					9472	8.8	
M-19A	900	64	7	13	3	1332	1.2	60
M-19B	2600	164	15	13	3	3848	3.6	60
M-19C	800	172	17	13	3	1184	0.5	60
Total-19	4300					6364	5.3	
M-20A	2600	168	Present canal with proper maintenance will be adequate					
M-20B	3000	364	Present canal with proper maintenance will be adequate					
Total-20	5600							
M-21A	2500	172	Present canal with proper maintenance will be adequate					
Total-21	2500							
M-22A	1500	316	24	13	3	2220	2.1	60
L-1A	2700	76	7	13	3	3996	3.7	60
M-22B	4000	584	42	13	3	5920	5.5	60
Total-22	8200					12,136	11.3	
M-23A	1600	150	15	13	3	2960	2.2	60
M-23B	1300	210	18	13	3	1924	1.8	60
Total-23	2900					4884	4.0	

ENGINEERING AND DESIGN DATA
Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-24A	1600	92	9	13	3	3108	2.2	60
M-24B	600	104	10	13	3	880	0.8	60
Total-24	2200					3988	3.0	
M-25A	900	68	7	13	3	1332	1.2	60
M-25B	600	88	9	13	3	888	0.8	60
Total-25	1500					2220	2.0	
M-26A	1500	40	5	13	3	2220	2.1	60
M-26B	800	56	6	13	3	1184	1.1	60
Total-26	2300					3404	3.2	
M-27A	2000	156	14	13	3	2960	2.8	60
M-27B	1900	204	18	13	3	2812	2.6	60
Total-27	3900					5772	5.4	
M-28A	1000	106	10	13	3	1480	1.4	60
M-28B	1500	152	14	13	3	2220	2.1	60
Total-28	2500					3700	3.5	
M-29A	600	48	6	13	3	888	0.8	60
M-29B	3300	178	16	13	3	4884	4.5	60
Total-29	3900					5772	5.3	

ENGINEERING AND DESIGN DATA
Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-30A	4600	308	25	13	3	6808	6.3	60
M-30B	1300	356	28	13	3	1924	1.8	60
Total-30	5900					8732	8.1	
M-31A	2400	236	20	13	3	3552	3.3	60
M-31B	1600	310	Present canal with proper maintenance will be adequate					
Total-31	4000					3552	3.3	
M-32A	1600	108	10	13	3	2368	2.2	60
M-32B	4000	513	36	13	3	5920	5.5	60
M-32C	1600	829	52	14	4	2672	2.4	65
L-1A	3200	106	10	15	5	5920	5.0	68
M-32D	700	960	62	16	6	1554	1.1	70
Total-32	11,100					18,434	16.2	
M-33A	2000	152	18	13	3	2960	2.8	60
M-33B	4600	524	43	13	3	6808	6.3	60
M-33C	2600	904	59	15	5	4810	4.0	68
M-33D	2600	1138	Present canal with proper maintenance will be adequate					
M-33E	700	1242	Present canal with proper maintenance will be adequate					
M-33F	900	1279	Present canal with proper maintenance will be adequate					
Total-33	13,400					14,578	13.1	

ENGINEERING AND DESIGN DATA

Area 7 - Hyman - Pamplico - Blossom - Salem

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-34A	2100	144	12	13	3	3108	2.9	60
L-1A	2500	232	18	13	3	3700	3.4	60
M-34B	3000	649	Present canal with proper maintenance will be adequate					
M-34C	800	679	Present canal with proper maintenance will be adequate					
Total-34	8400					6808	6.3	
M-35A	3200	140	14	13	3	4736	2.4	60
L-3A	3000	172	16	13	3	4440	2.2	60
M-35B	3000	712	50	13	3	4440	2.2	60
L-1A	3600	252	38	13	3	5328	2.6	60
L-2A	2200	908	45	14	4	3674	1.9	60
L-2B	4300	1420	74	16	6	8772	5.9	60
L-2C	3500	1632	80	17	7	7770	5.9	74
L-1B	3200	1840	120	22	12	10,080	6.5	89
M-35C	700	2596	174	26	16	2723	1.6	102
M-35D	4100	2856	Present canal with proper maintenance will be adequate					
Total-35	30,800					51,963	19.9	
M-36A	5400	290	25	13	3	7992	7.4	60
M-36B	2700	554	40	13	3	3996	3.7	60
M-36C	2300	724	52	15	5	4255	3.6	68
M-37D	3400	940	66	16	6	6936	5.5	70
Total-37	13,800					23,179	20.2	
Area-7 Grand Total	305,900					462,003	368.4	

ENGINEERING AND DESIGN DATA

Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-1A	500	56	5	13	3	740	0.7	60
M-1B	2200	153	Present canal with proper maintenance will be adequate					
M-1C	1400	238	Present canal with proper maintenance will be adequate					
Total-1	4100					740	0.7	
M-2A	2600	280	Present canal with proper maintenance will be adequate					
M-2B	3200	406	Present canal with proper maintenance will be adequate					
Total-2	5800							
M-3A	4100	284	Present canal with proper maintenance will be adequate					
M-3B	3800	456	Present canal with proper maintenance will be adequate					
Total-3	7900							
M-4A	2600	88	9	13	3	3848	3.6	60
M-4B	2300	180	Present canal with proper maintenance will be adequate					
Total-4	4900					3848	3.6	
M-5A	3300	221	Present canal with proper maintenance will be adequate					
M-5B	1000	255	Present canal with proper maintenance will be adequate					
Total-5	4300							

ENGINEERING AND DESIGN DATA
Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-6A	4000	372	Present canal with proper maintenance will be adequate					
M-6B	700	382	Present canal with proper maintenance will be adequate					
Total-6	4700							
M-7A	1000	38	4	13	3	1480	1.4	60
M-7B	2000	180	17	13	3	2960	2.8	60
M-7C	3300	533	40	13	3	4884	4.5	60
M-7D	500	549	41	13	3	740	0.7	60
Total-7	6800					10,064	9.4	
M-8A	800	136	13	13	3	1184	1.1	60
M-8B	700	152	15	13	3	1036	1.0	60
L-1A	2500	96	10	13	3	3700	3.4	60
L-1B	400	102	10	13	3	592	0.6	60
M-8C	4000	398	Present canal with proper maintenance will be adequate					
Total-8	8400					6512	6.1	
M-9A	3100	291	Present canal with proper maintenance will be adequate					
M-9B	2800	507	Present canal with proper maintenance will be adequate					
Total-9	5900							
M-10A	4000	273	Present canal with proper maintenance will be adequate					
M-10B	1600	350	Present canal with proper maintenance will be adequate					
Total-10	5600							

ENGINEERING AND DESIGN DATA
Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-11A	600	68	7	13	3	888	0.8	60
M-11B	2300	154	14	13	3	3404	3.2	60
Total-11	2900					4292	4.0	
M-12A	1000	156	14	13	3	1480	1.4	60
M-12B	2600	288	Present canal with proper maintenance will be adequate					
Total-12	3600					1480	1.4	
M-13A	3400	126	12	13	3	5032	4.7	60
Total-13	3400					5032	4.7	
M-14A	2100	130	13	13	3	3108	2.9	60
Total-14	2100					3108	2.9	
M-15A	3300	460	34	13	3	4884	4.5	60
M-15B	2600	520	40	13	3	3848	3.6	60
Total-15	5900					8732	8.1	
M-16A	900	33	4	13	3	1332	1.2	60
M-16B	3900	301	Present canal with proper maintenance will be adequate					
Total-16	4800					1332	1.2	

ENGINEERING AND DESIGN DATA
Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-17A	500	41	5	13	3	740	0.7	60
M-17B	2300	158	14	13	3	3404	3.2	60
M-17C	3300	330	Present canal with proper maintenance will be adequate					
L-4A	1500	132	13	13	3	2220	2.1	60
L-4B	4000	330	25	13	3	5920	5.5	60
L-5A	900	49	5	13	3	1332	1.2	60
L-5B	3300	134	13	13	3	4884	4.5	60
L-4C	1900	533	Present canal with proper maintenance will be adequate					
L-4D	2600	718	Present canal with proper maintenance will be adequate					
L-6A	1600	60	6	13	3	2368	2.2	60
L-6B	3200	136	13	13	3	4736	4.4	60
L-4E	2500	982	Present canal with proper maintenance will be adequate					
M-17D	2600	1520	Present canal with proper maintenance will be adequate					
M-17E	700	1556	Present canal with proper maintenance will be adequate					
M-17F	1600	1608	Present canal with proper maintenance will be adequate					
L-3A	3600	222	18	13	3	5328	5.0	60
L-3B	800	242	20	13	3	1184	1.1	60
L-3C	800	264	21	13	3	1184	1.1	60
L-3D	1200	344	28	13	3	1776	1.7	60
M-17G	1100	2008	Present canal with proper maintenance will be adequate					
L-2A	900	78	8	13	3	1332	1.2	60
L-2B	3000	198	17	13	3	4440	4.1	60
M-17H	3200	2206	Present canal with proper maintenance will be adequate					
L-1A	3300	284	25	13	3	4884	4.5	60
L-1B	4100	796	58	15	5	7585	6.4	68
L-1C	1000	832	58	15	5	1850	1.6	68
L-1D	1400	866	59	15	5	2590	2.2	68
M-17I	700	3096	Present canal with proper maintenance will be adequate					

ENGINEERING AND DESIGN DATA
Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-17J	1400	3175	Present canal with proper maintenance will be adequate					
M-17K	1500	3219	Present canal with proper maintenance will be adequate					
Total-17	60,500					57,757	52.7	
M-18A	5300	442	35	13	3	7844	7.3	60
M-18B	400	468	37	13	3	592	0.6	60
Total-18	5700					8436	7.9	
M-19A	2700	148	14	13	3	3996	3.7	60
M-19B	2000	201	18	13	3	2960	2.8	60
Total-19	4700					6956	6.5	
M-20A	1600	637	44	14	4	2368	2.4	65
M-20B	1300	675	48	14	4	1924	1.9	65
M-20C	2500	792	55	15	5	3700	3.9	68
Total-20	5400					7992	8.2	
M-21A	1900	216	18	13	3	2812	2.6	60
M-21B	2300	356	28	13	3	3404	3.2	60
Total-21	4200					6216	5.8	

ENGINEERING AND DESIGN DATA
Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-22A	3600	302	24	13	3	5328	5.0	60
Total-22	3600					5328	5.0	
M-23A	3100	296	24	13	3	4588	4.3	60
Total-23	3100					4588	4.3	
M-24A	2300	112	12	13	3	3404	3.2	60
M-24B	900	132	14	13	3	1332	1.2	60
Total-24	3200					4736	4.4	
M-25A	2000	89	9	13	3	2960	2.8	60
M-25B	2100	113	13	13	3	1480	2.9	60
Total-25	4100					4440	5.7	
M-26A	3100	228	18	13	3	4588	4.3	60
M-26B	1500	288	23	13	3	2220	2.1	60
Total-26	4600					6808	6.4	
M-27A	6700	336	28	13	3	9916	9.2	60
M-27B	1300	385	30	13	3	1924	1.8	60
Total-27	8000					11,840	11.0	

ENGINEERING AND DESIGN DATA

Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-28A	4900	394	30	13	3	7252	6.7	60
Total-28	4900					7252	6.7	
M-29A	3600	176	17	13	3	5328	5.0	60
M-29B	900	200	19	15	5	1332	1.4	68
Total-29	4500					6660	6.4	
M-30A	3100	256	20	13	3	4588	4.3	60
M-30B	4600	628	42	13	3	6808	6.3	60
M-30C	3600	837	58	15	5	6660	5.6	68
M-30D	1700	881	Present canal with proper maintenance will be adequate					
Total-30	13,000					18,056	16.2	
M-31A	700	82	8	13	3	1036	1.0	60
M-31B	1500	142	13	13	3	2220	2.1	60
L-1A	1900	96	10	13	3	2812	2.6	60
L-1B	900	114	11	13	3	1332	1.2	60
L-2A	2800	225	18	13	3	4144	3.9	60
L-2B	400	235	19	13	3	592	0.6	60
L-1C	2200	559	40	13	3	3256	3.0	60
M-31C	5900	988	68	16	6	12,036	9.5	70
Total-31	16,300					27,428	23.9	

ENGINEERING AND DESIGN DATA

Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-32A	1700	182	16	13	3	2516	2.3	60
Total-32	1700					2516	2.3	
M-33A	1800	70	7	13	3	2664	2.5	60
M-33B	3600	302	Present canal with proper maintenance will be adequate					
Total-33	5400					2664	2.5	
M-34A	4100	305	24	13	3	6068	5.6	60
M-34B	1300	441	34	13	3	1924	1.8	60
M-34C	1400	517	40	13	3	2072	1.9	60
Total-34	6800					10,064	9.3	
M-35A	800	94	9	13	3	1184	1.1	60
M-35B	1000	203	18	13	3	1480	1.4	60
M-35C	2600	387	30	13	3	3848	3.6	60
L-3A	1200	60	5	13	3	1776	1.7	60
L-3B	1300	78	6	13	3	1924	1.8	60
L-4A	1000	97	10	13	3	1480	1.4	60
L-4B	900	103	10	13	3	1332	1.2	60
M-35D	1600	648	Present canal with proper maintenance will be adequate					
L-5A	3800	252	Present canal with proper maintenance will be adequate					
L-5B	900	268	Present canal with proper maintenance will be adequate					
M-35E	2200	984	Present canal with proper maintenance will be adequate					
L-2A	2800	146	Present canal with proper maintenance will be adequate					
L-1A	3500	402	Present canal with proper maintenance will be adequate					

ENGINEERING AND DESIGN DATA
Area 8 - Poston - Salem - Vox - Johnsonville

CANAL No. (1)	LENGTH Ft. (2)	WATERSHED Ac. (3)	DISCHARGE c.f.s. (4)	CHANNEL DIMENSIONS TOP WIDTH Ft. (5a)	CHANNEL DIMENSIONS BOTTOM WIDTH Ft. (5b)	EXCAVATION Cu. Yds. (6)	RT. OF WAY CLEARING Ac. (7)	REQUIRED RT. OF WAY WIDTH Ft. (8)
M-35F	900	1422	Present canal with proper maintenance will be adequate					
M-35G	2300	1588	Present canal with proper maintenance will be adequate					
Total-35	26,800					13,024	12.2	
M-36A	1500	180	17	13	3	2220	2.1	60
M-36B	2700	288	23	13	3	3996	3.7	60
Total-36	4200					6216	5.8	
M-37A	2300	184	17	13	3	3404	3.2	60
M-37B	2900	264	22	13	3	4292	4.0	60
Total-37	5200					7696	7.2	
Area-8 Grand Total	277,000					271,813	252.5	

VICINITY MAP

FIGURE 3

INDEX TO ATLAS SHEETS
WATER RUNOFF STUDY
FOR
MAIN DRAINAGEWAYS AND OUTLETS
IN
FLORENCE COUNTY, SOUTH CAROLINA

0 5 10 15

Approximate Scale - Miles

LEGEND

- Primary Road
- Federal Highway
- State Highway
- County Line
- Planning Unit Boundary
- Watershed Boundary
- Sub-Watershed Boundary
- M-12A — Main
- L-1A — Lateral
- Existing Channels or Natural Drainage in Swamp

OCTOBER 1978 4-36631

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

0 1 MILE   0 5000 FEET   APPROXIMATE SCALE: 1:50,000   0 2000 METERS   0 2 KILOMETERS

JULY 1978 4-36631

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

0 1 MILE 0 5000 FEET APPROXIMATE SCALE: 1:50,000 0 2000 METERS 0 2 KILOMETERS

JULY 1978 4-36631

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

0 1 MILE

0 5000 FEET

APPROXIMATE SCALE: 1:50,000

0 2000 METERS

0 2 KILOMETERS

JULY 1978 4-36631

④

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

0 1 MILE 0 5000 FEET APPROXIMATE SCALE: 1:50,000 0 2000 METERS 0 2 KILOMETERS

JULY 1978 4-36631

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

(Joins sheet 2)

(Joins sheet 4)

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

(Joins sheet 8)

0 1 MILE 0 5000 FEET APPROXIMATE SCALE: 1:50,000 0 2000 METERS 0 2 KILOMETERS

JULY 1978 4-36631

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

0 1 MILE 0 5000 FEET APPROXIMATE SCALE: 1:50,000 0 2000 METERS 0 2 KILOMETERS

JULY 1978 4-36631

This is one set of maps prepared by the Soil Conservation Service, U.S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U.S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

(Joins sheet 4)

(Joins sheet 6)

(Joins sheet 8)

(Joins sheet 9)

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

0 1 MILE

0 5000 FEET

APPROXIMATE SCALE: 1:50,000

0 2000 METERS

0 2 KILOMETERS

JULY 1978 4-36631

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

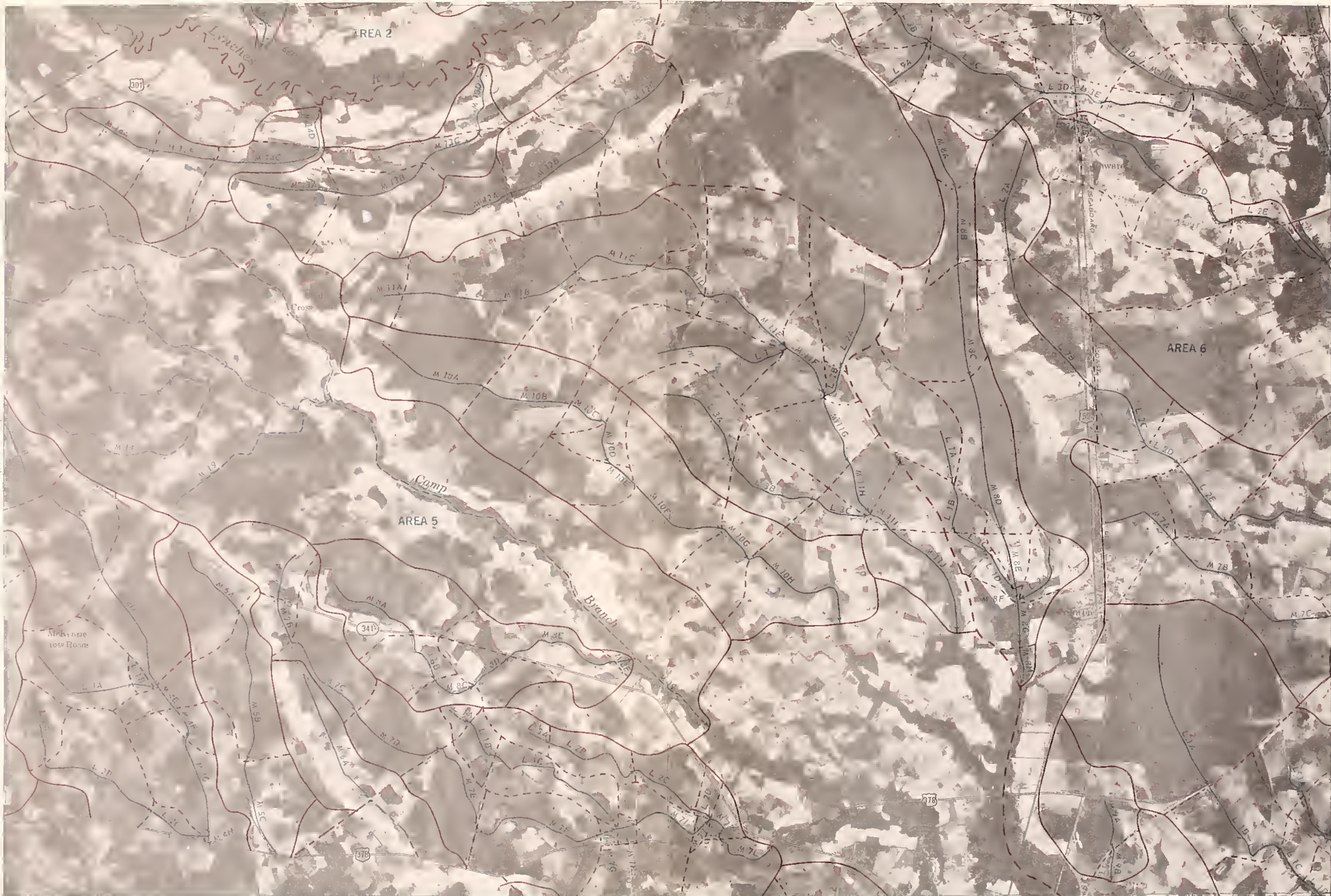
0 1 MILE 0 5000 FEET APPROXIMATE SCALE: 1:50,000 0 2000 METERS 0 2 KILOMETERS

JULY 1978 4-36631

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.



0 1 MILE

0 5000 FEET

APPROXIMATE SCALE: 1:50,000

0 2000 METERS

0 2 KILOMETERS

JULY 1978 4-36631

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

(Joins sheet 8)

(Joins sheet 9)

(Joins sheet 10)

(Joins sheet 11)

Friendfield

Lynches River

AREA 6

AREA 7

Bingham

Swamp

Cross Roads

Salem

AREA 8

51

378

0 1 MILE

0 5000 FEET

APPROXIMATE SCALE: 1:50,000

0 2000 METERS

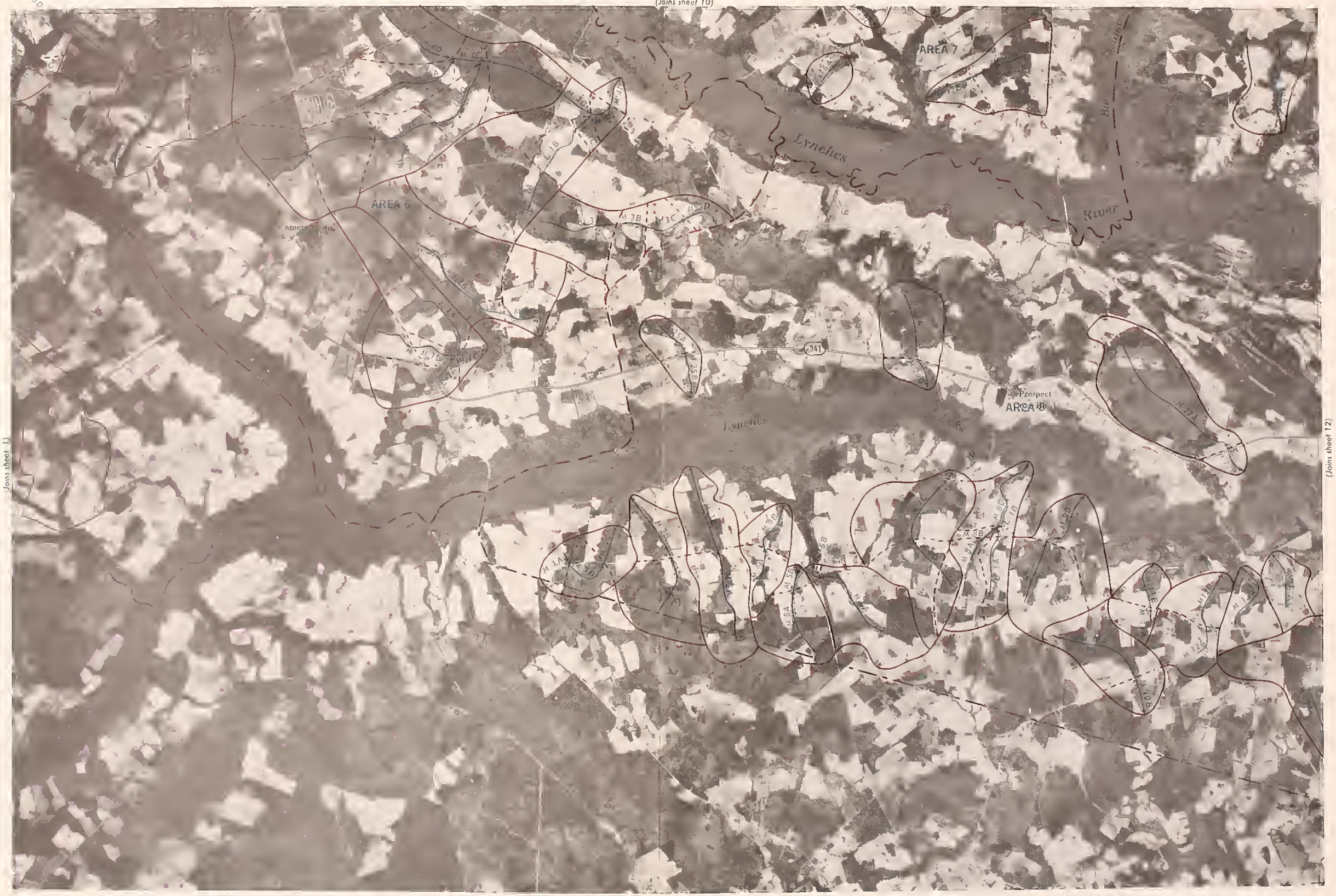
0 2 KILOMETERS

JULY 1978 4-36631

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

(Joins sheet 10)



(Joins sheet 12)

N

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.

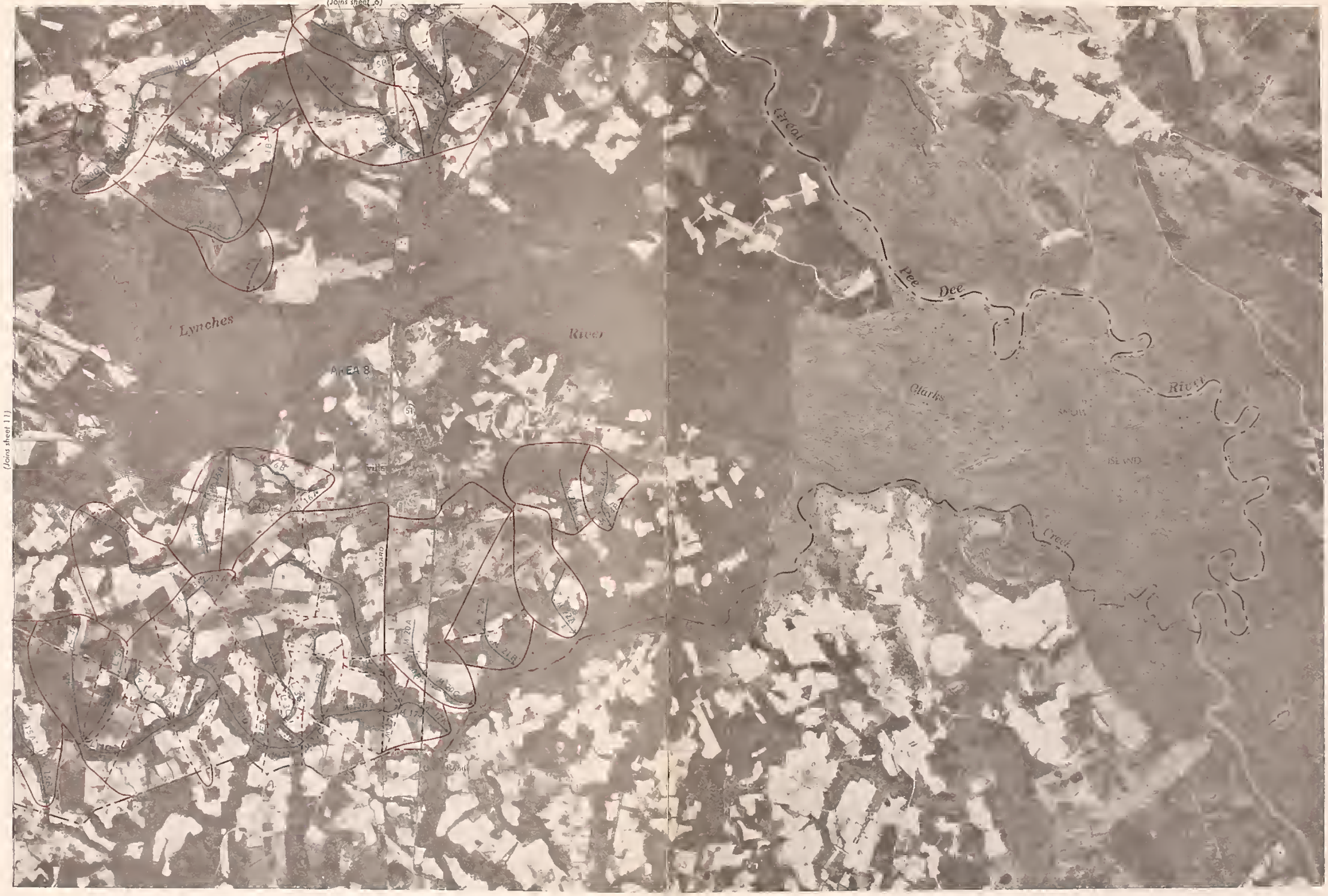
(Joins sheet 1)

0 1 MILE 0 5000 FEET APPROXIMATE SCALE: 1:50,000 0 2000 METERS 0 2 KILOMETERS

JULY 1978 4-36631

WATER RUNOFF STUDY FOR MAIN DRAINAGEWAYS AND OUTLETS IN FLORENCE COUNTY, SOUTH CAROLINA

(Joins sheet 6)



(Joins sheet 11)

0 1 MILE 0 5000 FEET APPROXIMATE SCALE: 1:50,000 0 2000 METERS 0 2 KILOMETERS

JULY 1978 4-36631

This is one set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a water runoff study for main drainageways and outlets in Florence County, South Carolina. The maps have been prepared in cooperation with Florence County Soil and Water Conservation District and under the financial sponsorship of Florence County. For information regarding the complete water runoff study report, write the Soil Conservation Service, U. S. Department of Agriculture, Columbia, South Carolina. This map was compiled as an uncontrolled mosaic from aerial photography flown in 1975. Surveys were executed in 1977 and maps prepared in 1978.